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AUTOGENOUS VACCINES*.

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Autogenous vaccines represents the very highest development of vaccine therapy. When Von Biehrring made his epoch making discoveries in 1890, optimistic members of our profession firmly believed that the end of infectious diseases was nigh. Surely it would be but a few years before specific sera would be found against all diseases caused by bacteria. The enthusiasm running through the medical world then was very similar to that found today regarding the cure of cancer. Over twenty years have passed since the discovery of diphtheria antitoxin and yet the infectious diseases are still very much with us. In spite of this I dare say that the enormous benefit derived from the diphtheria antitoxin is far less than the permanent good which has come from the tremendous impetus which Biehrring's brilliant work gave to scientific investigation along the lines of the nature of the bacterial products causing disease, and of the mechanism employed by the organisms fighting the poisonous disease producing substances derived from micro-organisms. For it was the work previously accomplished in the line of immunity which made it possible for Sir Wright to discover the opsonins and develop a specific bacterial therapy.

Vaccine therapy is no longer in the experimental stage. The value of this medical armamentarium has been amply demonstrated. This type of therapy has come to stay and it is my object tonight to consider autogenous vaccines under the following main headings: first, the theoretical modus opperandi; second, the method of preparation and; third, the diseases against which autogenous vaccines can and should be employed.

The clinical manifestations and pathological changes manifested in bacterial diseases are not due to the organisms per se but are caused by products of bacterial growth which differ with the various diseases. Thus the B diphtheriae secrete a true toxin that can be readily sepa-

*Read before the Des Moines Pathological Society.

rated from the bacilli and which when injected produces the typical disease. When, however, the typhoid bacilli are separated by a filter from the products of their growth in broth, in the same way in which the diphtheria toxines are separated, and this bacilli free filtrate is injected, the results are nil, showing that the poison responsible for typhoid fever differs greatly from that producing diphtheria. This typhoid producing substance is intimately associated with the typhoid bacilli and can only be separated from them by difficult and laborious methods. In other words it is a true endotoxin. Again there are micro-organisms like the bacillus of tuberculosis, the staphlococci and the streptococci, the deleterious effects of which are due wholly, or in part, to neither toxines nor endotoxines but to poisonous bacterial proteins. Thus we see that bacterial diseases are due to at least three different chemical substances; thermolabile toxines, the more stable endotoxines and the various bacterial proteids.

Now an enormous amount of work has determined fairly definitely that the attacked organism seeks to limit the ravages of these poisonous substances as well as to terminate the disease by the manufacture of substances counteracting the evil effect of the invaders. These immune bodies thus produced are not only active against a certain species of micro-organisms but often are specific for the particular strain producing the disease. In this way it comes about that when the body cells are not swamped by the diphtheria antitoxine they will react to the irritation by the production of a chemical substance, the antitoxine which will render inert the diphtheria antitoxine, and that alone. This substance, active as it is in the destruction of the toxine has no evil effect on the bacilli themselves.

On the other hand in the case of the endotoxines of typhoid fever the body cells do not respond to the stimuli—the antigen, by the formation of a specific anti-endotoxine, as one would expect, but whenever endotoxines, bacterial proteids, or dead bacteria lead to an irritation of the cells of the body, they respond by the formation of a series of highly complex chemical substances, antibodies, which are destructive, not to the product of the bacteria but to the micro-organisms themselves. The antibodies responsible for this destructive work on the bacteria are characterized as a rule, by being specific to the particular strain of bacteria causing the disease, and also by the fact that another cell or substance is necessary for the completion of the work. These aiders of the specific immune bodies are present in the normal blood. Thus in typhoid fever for instance the antibody acquired through immunization needs the assistance of another substance found in the normal blood and which cannot be increased by immunization in order to kill the typhoid bacilli. This chemical is known as a complement.

In pneumonia and tuberculosis the immune bodies called by Wright, opsonins, must be aided by the phagocytes of the blood in order to destroy the causative organisms. So then, the therapeutive value of autogenous vaccines depends almost entirely on the ability of the injected vaccines to stimulate the body-cells in such a way that specific antibodies of the two last named types, i. e. the opsonins and the amboceptors are produced against the special strain of bacteria causing the disease. It should be plain from the above that these antibodies may be formed either after the injection of an endotoxine or when a person is having a disease, and again through the injection of bacterial proteid or through the injection of dead bacteria which eliminates the danger of the disease and combines the stimulating properties of the proteids and the endotoxines in one. It should also be evident that there is a maximum and a minimum limit to the amount of immune bodies manufactured by the cells. In other words, if but a slight amount of antigen enters the circulation, the body-cells respond by the production of a small amount of antibodies and again there might be circulating in the blood stream and lymph just enough of these immunizing substances to keep the cells throwing off the greatest possible amount of antibodies. When on the other hand enough bacterial poisons are present to swamp the body, the immunizing mechanism of the cell is paralyzed and a fatal result will follow. Thus there is a zone of possibilities produced between diseases of a localized nature where causative antigens lead to the production of a smaller amount of immune bodies than the cells are capable of manufacturing, and diseases in which the immune mechanism is working at full speed, as it were. It is this gap or belt which the autogenous vaccines theoretically fill. They are only of value when the body cells are not already manufacturing the largest possible amount of antibodies, and are distinctly contraindicated in profound generalized infections where their injection might lead to paralysis of the already overworked immune mechanism. This was Wright's original contention, and practical application has since abundantly demonstrated the truth of his ideas. The benefit derived from autogenous vaccines, then, consists in their ability to help the body exert its entire power of defending itself.

Since the dead bacteria contain both bacterial proteids and endotoxines and because dead bacteria are much more readily obtained than either of the former, it is the dead bacteria which are used exclusively in the manufacture of autogenous vaccine, to a description of which we now turn.

Preparation of the Vaccine. The first essential is to obtain a pure culture of the causative organism. This is sometimes a very easy task as was the case in a patient referred to me by Dr. Minassian where a

ripe boil contained staphlococci in pure culture. Again at times, it is a very difficult task; thus in pyorrhea alveolaris, five to six different kinds are usually present. However this may be, a pure culture must be secured and the best method of obtaining this is to plate the material obtained on blood agar and then transfer the pure cultures into four or five tubes of blood agar slants. These tubes are then put into an incubator and left for twenty-four to forty-eight hours, depending on the type of the organism in question, it being necessary to grow the slow developing streptococci a day longer than most other organisms. A small amount of sterile salt solution is then poured into each tube and a heavy suspension of living organisms obtained. The mixtures from the various tubes are collected into another empty sterile test tube which is sealed over a flame, and then after cooling, the combined mixture is shaken long enough to produce a homogenous suspension. This is sometimes a very difficult task, especially when organisms are adhering cocci, such as the staphlococci and the Micrococcus tetragenus.

When the above is accomplished a small amount of the now thoroughly mixed suspension is drawn up into a capillary pipette and then thoroughly mixed with an equal amount of normal blood. A drop of this is then smeared on a glass slide and is stained either with ordinary blood stain, such as Wright's, or what is perhaps still better, with carbol thyonin. The smear is now ready to be counted. Before commencing the count, the tube containing the bacterial suspension is again sealed and submerged in hot water at from 58 to 60 degrees for an hour to an hour and one-half, and while the bacteria are being killed the counting of the organisms on the slide usually takes place. This is the first step in the process in the standardization of the vaccines, and consists in counting a number of fields under oil, a good number being from thirty to fifty fields. The number of bacteria and the number of organisms are noted in each field, then the number of bacteria in a cubic millimeter is estimated by comparing them with the number of red cells present. Thus if the relation of bacteria to reds was as ten to five, then the number of bacteria in a cubic millimeter would be twice that of the red cells, or ten millions. With the number of organisms per cubic millimeter known, it is an easy matter to standardize the vaccine so as to contain the desired number of bacteria needed for each dose in one or a half c. c., by the simple addition of normal salt solution.

When the stock mixture has been in hot water for the required length of time a subculture is made on blood agar and returned to the incubator for another twenty-four hours. This is a very important step and should never be omitted, and no vaccine must leave the laboratory until this subculture has proven sterile. The required amount of normal salt solution is then added to the mixture to make up the proper

strength. This is followed by the addition of enough phenol to make the whole mixture up to one-half per cent.

The vaccine may now, according to the method of Wright, be put into a sterile nursing bottle having an inverted nipple and the dose may be withdrawn in the desired number of doses. However, this method is hardly safe in the hands of some men and it is more than possible to re-infect the vaccine through the handling of the bottle and the continous puncturing of the nipple by the hypodermic. For this reason I believe it is very much safer to measure out the correct doses, put them into sterile small glass tubes, then seal these over a flame, and send the vaccines out to be administered.

The dose of a vaccine differs with the different organisms, the initial dose of streptococci being from eighty to a hundred million for the adult and then gradually increasing the subsequent doses, to from two hundred and fifty to five hundred million for the first dose of staphlococci and then increasing in the same way. For children my custom has been to give as many twenty-fifths of the adult dose as the child is number of years old.

The vaccine is administered hypodermically and in any convenient place where the subcutaneous tissue is loose; for women, the back between the scapulae is a good place. If the needle is plunged instead of forced into the tissue, and all the air has been let out previous to the injection, the pain caused by the procedure is very small indeed. Now, the reaction following the injection of a first dose may be from nothing to a condition simulating shock. It differs with the dose given and the susceptibility of the individual. So far as I am aware, there has been no fatal results following the injection of the vaccine and if the dose is proximate to the resisting power of the individual a local redness and slight tenderness is all that appears after three or four hours this lasts from twenty-four to forty-eight hours. This reaction is often followed by a sense of well-being and comfort which is associated with the first improvement of the disease. On the other hand, if the dose is too large the slight local redness changes into a marked swelling of the extremity, great tenderness over the area inoculated, severe pain in the effected limb, headache, backache, and sometimes chills and even fever.

The curative effect of the vaccine treatment can best be estimated by determining the opsonic index. This method was invented by Wright and in the hands of skilled laboratory workers furnishes a valuable guide. The opsonic index is estimated before and during the treatment and in the cases going on to recovery the condition obtained is about as follows: the index is usually below normal at the beginning of treatment, that is, supposing the normal number of bacteria in ques-

tion taken up by each leucocyte be four, then just before treatment the number be, say, three bacteria or three-fourths of the normal index. After the first injection there usually appears what Wright calls a negative phase lasting, however, only a short time, so that the opsonic index a day after the injection may be a half only. From now on there is a gradual rise so that by the end of the fifth day when another dose ought to be administered the number of bacteria engulfed by each leucocyte may be as high as six. After the second injection there may be a barely perceptible fall lasting, however, but a few hours which is followed by a continuous rise and this rise is now manifested by the patient's condition being plainly improved. The rise of the index may continue until each leucocyte is able to handle twice its normal amount of bacteria and this high phase then lasts for some time and is followed by a gradual return to normal after the patient is cured.

Now the number of doses needed to establish a cure differs with the different forms of diseases against which the vaccines are employed, thus two or three doses may suffice in a case of furunculosis but in such a chronic disease as acnea vulgaris the treatment must continue for weeks in order to establish a permanent cure.

In passing now from the theoretical production of immunity and the preparation of the vaccine to a consideration of the various diseases against which autogenous vaccines may be employed I wish to emphasize once more that autogenous vaccines from a theoretical point at least are only of value when the cells are not producing their maximum amount of immune bodies, and also the fact that the value of these vaccines depends on the production of an active immunity and for that reason some time is always necessary for the establishment of a cure. In examining the recent literature it at once becomes apparent that autogenous vaccines have been employed against a great variety of widely differing troubles. In other words autogenous vaccines have undergone the same evolution as that of any other new remedy and have been used by enthusiastic practitioners against almost any disease they have been dealing with. These men then have reported success very much along the same line as the reported success of such quack treatment as the mud baths or Doweism and other questionable methods. In other words apparent good results will follow almost any kind of a treatment, it matters not much what it may be. The factors leading to such optimistic results may be said to a certain extent to be the same and do not indicate in any way the true value of a particular kind of treatment. When on the other hand one seeks to eliminate all these common factors which result in enthusiastic testimonies and thus find the true intrinsic value of vaccine therapy, great difficulties are encountered. Nevertheless, such a

procedure is absolutely essential in order to form a fair estimate of the vaccine.

In the following I have attempted to weed out the optimistic statistics in order to show, if I may, the diseases in which this kind of treatment is distinctly indicated. In order to accomplish this I have divided the list shown you into three classes—*Class one* includes such diseases as true septicemia, ulcerative endocarditis, general peritonitis and eczema. All these, with the exception of eczema, are diseases characterized by a profound toxemia and for this reason I hold that vaccine therapy is contraindicated. Regarding septicemia: it is very much to be regretted that the term is used so loosely by the profession, for if septicemia is meant to include any disease where bacteria may at any time be found in the blood, then, of course most localized infections are septicemias, and that being the case, it is easy to see why some of them are cured by autogenous vaccines. If however the term is limited, as I believe it should be, to cases of profound toxemia where numerous organisms are circulating in the blood, and where the resistance of the animal is too weak to attempt localization, then the administration of vaccines is not only non-productive of good but distinctly contra-indicated for the effect, if any, would be to completely paralyze the already overworked mechanism and thus hasten the exodus. Now as far as ulcerative endocarditis goes, I have been informed by a mighty good authority that its diagnosis in life is not possible, for one thing, and on the other hand, the condition as far as the immune mechanism goes, is similar to that of septicemia. The same can be said about generalized peritonitis. Another thing which is more or less common to all of these diseases is the fact that they are acute and thus autogenous vaccines are contra-indicated from this point of view. Regarding eczema, this much must of course be remembered, that the direct cause of this disease is wholly unknown. For this reason an attempt to employ vaccines from a specific organism appears to me to be absurd.

Class two.—In this class I include such diseases as pyemia, erysipelas, vulvovaginitis, chronic otitis media, impetigo, osteomyelitis, empyemia, cholocystitis, ulcerative colitis, streptococcic infection in scarlet fever, a mixed infection in advanced tuberculosis. Diseases coming under this class may under certain conditions be treated with autogenous vaccine very successfully indeed, but as you have doubtless noted, many of these are acute infections which either have a tendency to spontaneous recovery or yield readily to other forms of treatment. Thus I am inclined to question very much, the good results recorded in the treatment of erysipelas for the simple reason that erysipelas is an acute self limiting disease in most instances, and also because the severity of the infection differs so widely in various persons. Now in the case of gonorrheal vaginitis or urethritis of the acute type, auto-

genous vaccines have failed to give any noticable relief. In the chronic vulvo-vaginitis of children, on the other hand, this kind of treatment has been very successful in the hands of such a careful investigator as Hamilton, so that the difference between the old and the new treatment has been sixty per cent of cures in the former as against ninety in the latter, and the duration of the treatment has been reduced from ten and a half months by the old method to two by the new. So then here is a type of disease where autogenous vaccines are distinctly indicated. Regarding otitis media, I wish to say that some very good results have been obtained in the so-called subacute stages. This applies equally well to sinusitis and conjunctivitis. There is no doubt that in a case of mild pyemia, autogenous vaccines are distinctly indicated and are productive of a great amount of good. As far as streptococcus complications in scarlet fever go, the results are doubtful in the acute cases but distinctly favorable in the chronic. And as far as the mixed infections occurring in the later stage of tuberculosis go, I simply wish to say that the patient is entitled to any straw that he can reach financially.

Class Three.—In this class I include such affections as furunculosis, carbuncles, acnea vulgaris, pyorrhea alveolaris, gonorrheal arthritis, some forms of osteomyelitis, mastoiditis, coccogenous sycosis and certain chronic types of impetigo as well as pyelitis and cystitis. In this class autogenous vaccines are not only indicated but is the treatment of choice in most instances. You will observe that most of the diseases coming under this group are more or less localized chronic or semi-chronic suppurative, and it is indeed in these chronic granulomatous conditions that the treatment yields such brilliant results. In my own short experience I have seen carbuncles and boils, which have stubbornly resisted any other kind of treatment, fairly melt away after the second dose of a vaccine. Acne vulgaris too, frequently responds in a truly brilliant way to the acquired immunity produced by the vaccines. In this disease however, the treatment must be continued for weeks in order to prevent possible recurrence. The most stubborn instances of gonorrheal arthritis often respond in a striking way to the treatment by vaccines. This is also the case with pyorrhea alveolaris which is the most unsatisfactory disease that a dentist has to treat. Personally I have seen a number of cases of this disease where rapid and permanent recovery occurred. In case of a deep seated coccogenous sycosis too, prompt and complete recovery follows the use of vaccine. I have also been told that vaccines are being employed against the ring worm type. Finally, cases of impetigo which resist any other treatment yield as a rule rapidly to autogenous vaccines.

Thus, gentlemen, I have sought to show you that autogenous vaccine therapy depends on the production of an acquired immunity against the very organism producing the disease, that it can be prepared and standardized with a reasonable amount of ease and that its value, as a treatment against certain, especially, somewhat localized suppurative diseases, is very great.

A TECHNIQUE FOR MACROSCOPIC AGGLUTINATION.

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The naked eye observation of the clumping of a homogeneous suspension of bacteria in test tubes to determine the titer of serum seems to be far superior to the microscopic method. The results are more accurate and the apparatus required is within the reach of all.

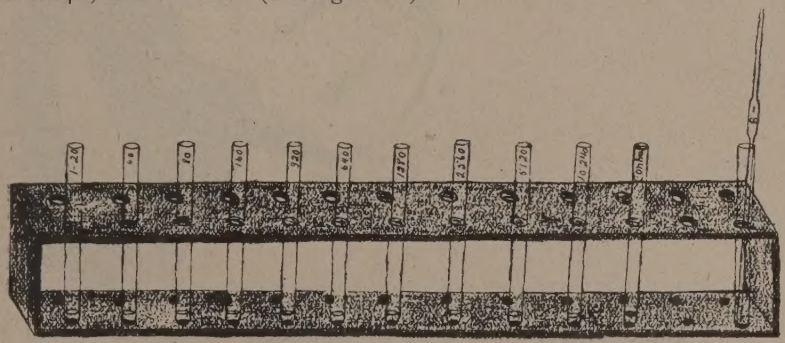
Macroscopically observed, in test tubes, agglutination evidences itself by the formation of *flakelike* masses which settle into irregular heaps at the bottom, leaving the supernatant fluid clear, in distinct contrast to the even, flat sediment and the clouded supernatant fluid of the control.

Technique:

1. Prepare a massive agar slant. It is important that ten loopfuls of the one culture are derived from the one agar slant.

2. Standardize a platinum loop so that it is just one millimeter in diameter.

3. Set up in a rack ten perfectly clean, unplugged test tubes and mark them 1-40; 1-80; 1-160; 1-320; 1-640; 1-1280; 1-2560; 1-5120; 1-10240; and control. (See figure 1.)



4. Take a sterile one cubic centimeter pipette and into each of the above prepared test tubes place one cubic centimeter of Normal Salt Solution, (8.5 grams per litre).

5. Now to the first tube add one c. c. of a 1-20 immune serum. Thus the first tube will contain a total of 2 c. c. of a 1-40 serum. Mix well and carry one c. c. of this 1-40 dilution from the first tube into the second tube. Thus the second tube now contains two c. c. of a 1-80 dilution while the first tube contains 1 c. c. of a 1-40 dilution.

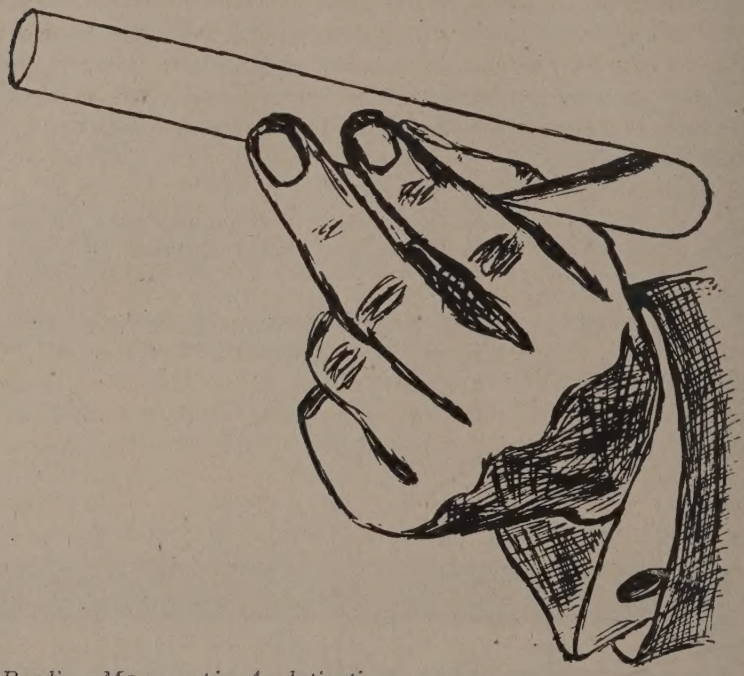
Continue the dilutions into all the other tubes mixing each thoroughly.

Discard one c. c. of the 1-10240 tube so that each tube will contain an *equal* quantity of diminishing dilutions of the serum. The tenth tube contains no immune serum. It is the control.

6. After the dilutions are made, emulsify one normal loopful of an eighteen hour massive agar culture into each of the above tubes, including control. In doing this care should be taken to hold tube almost flat. (See figure 2.) Emulsify—not directly in serum—but at moist edge of tube only, to avoid clumps of culture from falling into medium from loop in an unemulsified condition. Aim to obtain an even emulsion throughout.

7. Incubate for at least one hour and read with low power lens and naked eye. In doing this it is of utmost importance to have *proper* light.

Allow these tubes to stand at room temperature until next day when a final reading is recorded.



Reading Macroscopic Agglutination:

The emulsion, which is at first uniformly turbid, will be seen to loose its homogeneity and take on a finely granular appearance. This can be readily noted by comparison with a control specimen to which no serum has been added.

In the course of a few hours it will be obvious that flocculi of bacilli are being formed and that between these flocculi the fluid is clearing. Finally these masses sink to the bottom of the test-tube and it will be noted that if the bacilli in the control specimen also sink (as happens with killed organisms) the masses will be much more voluminous than the deposit of unagglutinated bacteria.

A microscopic examination of the deposit in these two cases will show the following:

1. In the deposit of dead bacilli, the separate rods have sunk slowly and have packed themselves closely together and will be, to a large extent, *horizontally* side by side.

2. In the agglutinated mass the bacilli point indifferently in all directions and the explanation suggests itself that they have been forcibly drawn together by a centripetal force.

C. E. Ruth's Demonstration at the Drake Alumni Clinic, April 18, 1912.

Fracture of the Femoral Neck,—It's Anatomic Treatment.—One-sixth of all fractures are of the femoral neck. One-third of all fractures of the aged are of this class. Nearly every community has one or more cripples from this cause. Many of these accidents are fatal. These facts at once announce its importance and that it is a grave injury and that it has not been successfully treated, as a rule. The question is, are these results due to following blind precedent in treatment or are they unavoidable. From the reports of some two hundred cases treated by the Maxwell "Anatomic Method," I have no hesitancy in saying that there is no more need of bad results in the treatment of this than of any other fracture of the leg or thigh, that union should, and under proper treatment will occur in every case which has vitality enough to live four weeks after the injury, and that all such cases living four months will have good serviceable limbs. The treatment is really very simple and can be applied by anyone with mediocre mechanical ability at a cash outlay for equipment of not to exceed fifty cents to one dollar. The cuts illustrating this method used by Fowler and copied in Keen's system of surgery, are unfortunate, appear complicated and are misleading.

The principles of the treatment are to first overcome the pull of all the muscles crossing the fracture line, whether they act: (a) *Vertically* (as the rectus femorus, sartorious, gracilious, tensor vagina femorus, long head of the biceps, semi-tendinosus and vertical part of abductor magnus).

(b) *Obliquely* (nearly all parts of the gluteii, pectineus, adductors, brevis, longus and oblique part of the adductor magnus.)

(c) *Internally* as all the rotators (obturators internous and externus, pyraformis, gemelii, *external rotators* (psoas and iliacus after fracture of the femoral neck, while formerly they were neutral or internal rotators).

Posterior displacing influence of the limbs weight upon the lower fragment tending to carry it behind the upper fragment while the combined action of the muscles cause,

(a) Overriding of the fragments.

(b) Tilting of the upper fragment.

(c) Forcing of the soft parts between the fragments by the action of the psoas and iliacus.

All these influences can be overcome and all deformity of,

(a) Shortening.

(b) Flattening of the hip.

(c) External rotation, can be made to entirely disappear at once when the treatment is properly applied, all pain at once relieved and

the patient is kept comfortable so long as the treatment is properly continued. The patient can attend to natures' calls without difficulty more than naturally results from the dorsal decubitus without pain or disturbance to the fragments. The patient may be raised to the sitting posture as often as may be required for rest, cleansing, or to prevent hypostatic pulmonary congestion without in any way disturbing the fragments or interfering with repair. While these displacing influences of muscle force and weight can be entirely overcome, it is plain that force must be applied so as to pull directly in the line of the normal direction of the neck of the femur and be of such force as to overcome all deformity and displacement.

It is at once apparent also that if such traction force can be applied in the normal line of the neck of the femur it must also make taut whatever remains of the capsular ligament which will by its vincular connection to the fragments, in a sleeve like action adjust, allign and maintain the proper position of all fragments so long as the proper amount and direction of the traction is continued. It is self-evident that such a pull cannot be adjusted by any single traction force but can easily be secured as a resultant of two forces; first, viz., vertical or longitudinal by a Buck's extension, using the patients body weight as the counter extension by elevating the foot of the bed ten to sixteen inches, applying a sufficient pull in this direction to make the longitudinal measurement of the two limbs equal. Second, a latteral outward pull on the upper end of the lower fragment so directed as to elevate the trocanter, making it as prominent as the one on the opposite side and to relieve all pain. The resultant of this lateral and vertical pull so applied as to overcome all disparity;

(a) In length of the limbs.

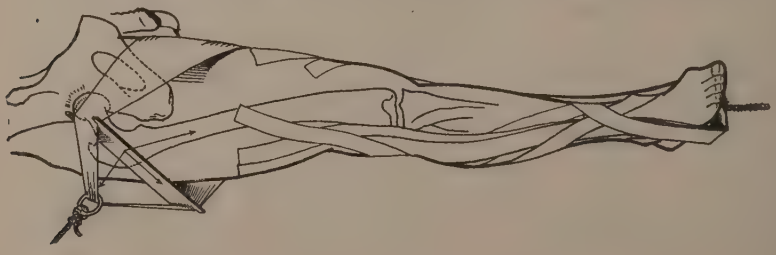
(b) Position of the trocanters.

(c) External rotation, or eversion of the foot.

(d) Relief of all pain, will give a resultant whose line of action falls through and in the axis of the normal neck of the femur.

SEE ILLUSTRATIONS.

(a) The Buck's extension adhesive plaster must be first non-irritating (the Z. O. plaster has given me the best of satisfaction).



The above cut represents the proper position of the bed tilted with the injured side and the foot of the bed raised enough to cause the body weight to make the required counter-extension. For an adult male tolerably muscular the weight at the foot should be from 20 to 30 lbs. at the first, and the lateral pull should be usually about two-thirds as much as that used on the foot. The use of this apparatus is equally applicable to the treatment of all cases of tuberculosis of the hip joint when they must be confined to the house or to bed as it places the joint in absolute rest and avoids all muscular spasm. Proper adjustment of the spreaders at the foot and in the lateral pull will avoid all injury to the maleoli and oedema of the limb from compression of the long saphenus while proper adjustment of the lateral pull will regulate the degree of inversion or eversion.

(b) Extending from well up on the thigh to near the maleolii.

(c) Must be at least two inches wide, with encircling apposition strips of same above the ankle, below and above the knee and at the upper end of the plaster, to give the maximum amount of distribution of the traction force, and yet must not constrict the circulation.

(d) Must have a spreader below the foot wide enough to prevent pressure of the adhesive strips on the maleolii.

(e) The leg should be supported upon a pillow so the heel bears no weight.

(f) The knee must be lifted six to eight inches every day or two to flex the leg and prevent ancylosis.

(g) The pull is arranged for by a jug or bucket attached to the cord passing over the pulleys, and in it weight is placed as shot, water or sand.

(h) The weight must be heaviest at first and may be reduced gradually only after the muscles have been tired out by several days.

pull, and when there are no longer any paroxysms of pain from spastic muscular contraction, disturbing the fragments.

The lateral pull must be arranged for,

(a) By moulding a binder's board six inches wide to the upper inner aspect of the thigh as close as possible to the body and long enough to ⅔ encircle the thigh.

(b) It must be secured in position by an adhesive strap, passing entirely around the thigh over the middle of the binder's board.

(c) Avoid chaffing from the upper edge of the binder's board by having a thick layer of gauze or cotton under it and extending just a little above its upper edge.

(d) The pulley for the lateral traction should usually be placed opposite the highest part of the iliac crest.

(e) It should be high enough above the bed so that the lateral pull upon the traction loop which passes around the upper end of the thigh shall be in such direction, when of proper force, as to overcome eversion(external rotation), flattening of the hip or a tendency of the trochanter to fall behind a corresponding level of the opposite trochanter.

(f) The lateral traction loop around the upper end of the thigh is best made of strong adhesive plaster to which the pulley cord is attached. This enables a very easy adjustment and control of the eversion (rotation, proposition) by shortening or lengthening the lower limb of the traction loop because the binders board is fixed to the thigh and the traction loop is fixed to the binders board. Thus giving absolute and easy control of all rotation difficulties enabling one to prevent eversion deformity with certainty.

(g) The lateral traction weight should ordinarily be about two-thirds the longitudinal pull, but in very fleshy feebly muscled persons the lateral pull at times must be equal to the longitudinal pull.

(h) The bed of the injured side should be raised two to four inches as may be needed to prevent the patients working toward or away from the lateral pulley.

In applying the lateral extension it is wise to place a spreader in the loop the full width of the thigh where the band passes around it, as to avoid compression of the long saphenus or femoral vessels. Failure to observe this precaution has in a few cases caused somewhat annoying oedema of the limb. The advantage of this treatment is its applicability to every age or condition, its simplicity of application, its certainty of adjustment of the fragments, absolute freedom from pain, maximum of liberty in charge of position, uniformity of satisfactory results, inexpensiveness of appliances. Good boney union has been secured by this treatment in patients who had gone from two to seven

weeks without reduction of the fracture. With proper care bed sores and all chaffing or ulceration of parts can be avoided. In cases suffering from bed sores when the treatment was begun the sores have uniformly been cured during the use of the treatment and without any pain or inconvenience to the patient. In reducing the fracture it is wise to always flex the thigh upon the abdomen to a right angle with the trunk and while traction is made upward on the flexed thigh an assistant should make outward traction on the pelvic end of the thigh so as to disengage any soft parts from between the fragments while the limb is being extended under traction because flexion of the thigh brings the line of action of the psoas and iliacus muscles above the fracture line in such manner that they can no longer force soft parts between the fragments. Plaster casts of whatever form are in the obese perfectly loose within three or four days and in the feeble are liable to chafe severely and in hot weather are very irksome in all cases. No form of splint can entirely overcome the displacing forces of weight and muscle action.

THE STYLE HUBBY LIKES.

Mrs. Shortly was discussing the latest fashions with a young lady caller.

"Did you say your husband was fond of those clinging gowns, Mae?"

"Yes; he likes one to cling to me for about three years."—August Lippincott's.

DESPERATE CASE.

Mrs. Scrappy—"John, did you see this? Woman stung, can't talk, puzzles doctors."

Scrappy—"Mary, a woman's tongue that can't talk would puzzle more than doctors."—Literary Digest.

SUCH IS LIFE.

Chief Clerk (to Office Boy)—"Why on earth don't you laugh when the boss tells a joke?"

Office Boy—"I don't have to; I quit on Saturday."—Literary Digest.

Wilfred was sitting on father's knee watching mother arranging her hair.

"Papa hasn't any marcel waves like that," said father; and Wilfred looking up at his father's bald pate, comforted him thus: "Nope, no waves; it's all beach."—Literary Digest.

TRACHOMA*.

JAMES DUNN, M. D., DAVENPORT, IOWA, FORMERLY A. A. SURGEON, U. S. PUBLIC HEALTH SERVICE.

Trachoma should interest the general practitioner as: 1st. It is a contagious disease, especially in the earlier stages. 2nd. A great many general practitioners do not recognize it. 3rd. The complications and sequelae are so disastrous and are responsible for many cases of partial and total blindness. And 4th. Trachoma exists in almost every community.

Trachoma is known as Egyptian ophthalmia, Granular conjunctivitis, Granular lids, etc. Due to the efficient school inspection in the large cities the disease is quite generally known, among the laity, as trachoma; but in the smaller communities they still adhere to the granular conjunctivitis or granular lids.

Trachoma is generally considered as a contagious disease, through the secretion, which is transferred from one eye to another, by means of the fingers, towels, handkerchiefs, etc., therefore the disease is spread most commonly in schools, barracks, orphanages, etc.

The United States Government designates it as a "dangerous contagious disease" and the New York Health Department (Division of Child Hygiene) will not allow children who have trachoma to attend school unless under treatment, by a competent physician.

As yet the contagious principal has not been isolated.

The trachoma bodies were described in 1907, as small bluish or violet bodies, seen in the epithelial cells near the nucleus; after smears have been stained with the Giemsa stain. They are difficult to find in any except the acute cases and have been found in other acute inflammations of the conjunctiva, and I do not believe can be relied upon as being pathognomonic.

Dr. Anna Williams of the New York Health Department, makes the statement that she does not believe there is a specific organism which causes trachoma.

Race seems to be quite an etilogic factor. The Hebrews and the people who come from the states which border on the Mediterranean Sea seem quite prone to suffer with this disease, as the Arabs, Armenians, Egyptians, Italians, Turks and Syrians.

Whether the changes produced in trachoma are simply a hypertrophy of the normal existing tissue of the conjunctiva, or whether there is a deposit of new lymphoid tissue, has not been definitely settled. We know there is a hypertrophy of the lymph spaces, with pos-

*Read before Scott County Medical Society, Davenport, Iowa, October 1, 1912.

sibly a deposit of new lymphoid tissue and this formation is the trachoma granule, which is situated in the adenoid layer, and lifts up the epithelium, making one of the most important diagnostic points: i. e. the trachoma granule is deep set in the conjunctiva.

The insidious cases of the granular form usually have no subjective symptoms, or only slight burning or the feeling as if a foreign body were in the eye. In the acute or papillary form there may be photophobia, lachymation, blepharospasm with itching and burning.

Dr. Osler well says: If you have examined your case thoroughly and are unable to make a diagnosis, you should not censure yourself, but if your consultant makes a diagnosis you could readily have made, had you examined your case thoroughly, you should feel badly.

When trachoma is well marked, it is quite easy to make a diagnosis but when not well marked, it is very difficult and in some cases impossible, but a thorough examination is a long step towards a diagnosis.

Given a patient with slight ptosis, thickening of the lids and narrowing of the palpebral fissure, with or without a slight muco-purulent discharge, you should evert the lids and examine the conjunctiva thoroughly.

It is not sufficient to simply pull the lower lid down, but the upper lid should be everted and the cul-de-sac well turned out, for this I prefer a glove buttoner or probe which is placed at the upper margin of the tarsus and over which the lid is everted, as it gives a much better view of the conjunctiva, than when the thumb is used, and with it the cul-de-sac can easily be brought into view, and it causes the patient less inconvenience and pain than when the thumb is used.

I have seen so many errors of diagnosis, when the conjunctiva of the lower lid alone was examined, that I am convinced that it is impossible to make a diagnosis, in all cases, without everting the upper lid and turning out the cul-de-sac.

From the local appearance of the conjunctiva there are usually three forms of trachoma distinguished:

1. The Papillary form:

In this form the conjunctiva is thickened and covered all over with little papillae, which are mostly hypertrophied normal papillae. This gives it the appearance of velvet, and is practically confined to the conjunctiva over the tarsal plate, but may involve all the conjunctiva.

2. The Granular form:

This form presents the trachoma granules, which are greyish or bluish-white, roundish translucent bodies of lymphoid tissue, firmly and deeply imbedded in the conjunctiva; they occur in the cul-de-sac and extend down over the tarsal plate; on palpation they are hard; are

from 1 to 2 millimeters in diameter but vary according to the duration of the disease; they have a great tendency to become confluent and are more numerous in the upper lid.

3. The Mixed Form:

This is a combination of the two foregoing forms, and makes up the majority of the cases.

Clinically, trachoma is divided into acute and chronic. This refers to the invasion of the disease and not to the duration, as practically all cases of trachoma are chronic in their course, the duration being months and years, and if a case recovers quickly there is usually an error in diagnosis.

Acute trachoma is rapid in its onset, accompanied by marked inflammatory symptoms, a profuse purulent discharge, the swelling is usually so marked that it obscures the trachoma granules and if it is impossible to make a positive diagnosis we must wait several days until the acute symptoms subside, under the ordinary treatment for an acute conjunctivitis.

Trachoma most frequently begins insidiously and may exist for several months before it gives symptoms, and when the lids are everted we see the typical "sago-like" trachoma granules, as before described, the conjunctiva is rough and does not have the velvety appearance of the papillary form, between the granulations are seen greyish-white bands which are the beginning of the cicatricial tissue, and in the terminal stages the conjunctiva is converted into a pale, bluish-white membrane of cicatricial tissue, with trichiasis, entropion, and pannus.

In New York City in the Department of Health (Division of Child Hygiene) there is no attempt to make a differential diagnosis, all granular conditions of the conjunctiva being diagnosed and treated as trachoma.

The Acute Papillary variety is diagnosed mostly by exclusion from:

1. Acute Contagious Conjunctivitis (or "Pink Eye"), here we have the Koch-Weeks Bacillus which can quite readily be found in the discharge.

2. Gonorrheal Conjunctivitis is diagnosed by finding the gonococci in the discharge.

The old problem is the differential diagnosis between the granular form and follicular conjunctivitis, which must be a clinical diagnosis. In follicular conjunctivitis the granules are more oval, transparent, soft, usually arranged in rows, resembling "frog-spon," remain discrete, are confined to the cul-de-sac and folds of transition; they appear superficial and never extend down over the tarsal plate. The conjunctiva is not thickened and if rolled with a Knapp roller

these granulations are easily demoved or often in a few years there is a spontaneous cure, in either case there is no formation of scar tissue and the complications and sequelae of trachoma are absent.

Vernal conjunctivitis (or spring catarrh), is distinguished by finding the Morax-Axenfeld Bacillus, if you are keen enough to detect it, otherwise, clinically the conjunctiva is covered with flat fleshy growths which are discrete, often pedunculated, resemble "cobble-stones" and the whole conjunctiva has a bluish-white appearance which looks as if a film of skimmed milk had been spread over it.

Pannus and ulceration of the cornea are the most frequent complications.

Pannus, is newly formed vascular tissue, which starts at the edge of the cornea and advances towards the center. It is a greyish, superficial, translucent mass, containing numerous blood vessels, which spring from the vessels of the conjunctiva, pass over the limbus and branch out into the pannus. It usually begins to develop at the upper margin of the cornea, and rarely covers more than the upper half of the cornea, but may cover the entire cornea. The pannus is not due to the mechanical irritation but is due to structural changes similar to that which takes place in the conjunctiva. When it encroaches on the pupillary area, vision is interfered with.

Corneal ulcers occur in the acute cases and also at the free border of the pannus. They are a serious complication and leave opacities which interfere with vision according to their location and density.

The most common sequelae are entropion and trichiasis, which are usually most marked in the upper lid. The contraction of the cicatricial tissue causes the entropion and this brings the cilia in contact with the cornea and causes constant irritation and subsequent disease of the cornea. Ectropion may occur in the lower lid, and symblepharon may result from contraction of the cicatricial tissue.

The treatment of trachoma is most discouraging, as the disease is so prone to relapse and the duration is measured by months and years, when the disease is well marked.

The form of treatment depends upon the form of the disease, and consists of both surgical and medical treatment.

In the acute papillary form, during the acute stage, ice compresses are to be applied to the eyes and changed every fifteen minutes. The eyes should be irrigated frequently with a saturated solution of boric acid and at three or four hour intervals a 1 to 2 per cent solution of silver nitrate should be lightly brushed over the lids, if the inflammation is very severe and there is ecchymosis—it should be dropped into the eyes; in either case the access should be washed away with normal

salt solution. A 25 per cent solution of Argyrol may be used instead of the silver nitrate, it being less painful.

After the more acute symptoms have subsided, but while there is still some inflammation applications with a smooth crystal of alum, or glycerole of tanin (15 to 25 per cent) should be applied once a day. A little later applications of the copper sulphate crystal should be applied.

In the granular and mixed forms, the conjunctiva should be scarified and the granules expressed, by means of a Knapp roller, or Noyes forceps. This usually requires a general anaesthetic, but in some individuals may be performed under a local anaesthetic. After all the granules have been expressed the conjunctiva is brushed with a 1:500 solution of mercury bichloride, this usually causes a slough which separates in two or three days. For a few days after expression it is necessary to apply ice compresses, and frequently irrigate the eyes with a solution of boric acid.

The granules may also be removed by grattage. For this I prefer a child's tooth brush which has had the bristles clipped short, and with this the granules are scrubbed until they are removed, it is well in this method to first scarify the conjunctiva. Sandpaper is also used for this purpose, but I prefer the tooth brush. When the inflammation begins to subside the copper sulphate crystal is applied to the everted lids, once a day. The crystal should be smooth and blunt and the application made lightly.

The application of the copper sulphate crystal produces the best and quickest results, but if there is too much reaction the glycerole of tannin or the alum crystal may be substituted.

Very often it is impossible to express all the granulations at one sitting, and it may be necessary to remove them by a subsequent expression or grattage. I prefer to start with expression, with the Knapp roller and then to treat the case with the copper sulphate crystal for three or four months, and then remove the remaining granulations by grattage.

The operation for the removal of the tarsal plate and the conjunctiva over it, then drawing the conjunctiva of the cul-de-sac forward attaching it to the margin of the lid, in many cases produces very good results, but I have seen some very bad cases of entropion result from this operation.

The most important thing in the treatment of trachoma is perseverance, both on the part of the patient and of the physician.

The prophylaxis of trachoma is very important, especially in institutions and schools. Patients should be told that they have a contagious disease and that towels, handkerchiefs and basins used by them must be kept apart from those used by others.

Trachoma should be recognized by the general practitioner and diagnosed early, in order to protect others from contagion and so that treatment may be started, as the prognosis is so much more favorable the earlier treatment is instituted.

CYSTIC DEGENERATION OF THE CHORION VILLI WITH REPORT OF A CASE.

M. J. JOYNT, M. D., JESUP, IOWA.

Very often in our student days we read of some pathological condition which is rare. Our study of the subject is very light, and in after years all knowledge of it is very meagre or else entirely forgotten. A very recent experience with hydatidiform mole caused me to study this subject anew, and it is somewhat clearer in my mind now than ever before.

Hydatidiform mole or cystic degeneration of the chorion villi is a rare condition, and there are no reliable statistics in regard to its frequency. Hirst thinks it occurs probably once in two thousand to three thousand cases. He has had three in fifteen years. In regard to its etiology very little is known, but it is most likely of fetal origin.

In order to explain this condition more fully, it will be necessary to describe the development of the chorion. When the ovum first drops into the uterine cavity and is imbedded in folds of the mucous membrane, the cell wall of the ovum sends out numerous prolongations which serve to fix the ovum in position and perhaps draw nutriment from the mucous membrane. This cell wall with its villous like projections constitutes the false chorion, which soon disappears and is replaced by a single layer of cells springing from the outer layer of the blastodermic membrane and surrounding the whole ovum. This membrane now sends out branch like processes which become the villi of the chorion. These at first are non-vascular but hollow, and they soon receive blood vessels into each of the loops from the fetus. About the third month these villi begin to atrophy and disappear, except at that portion of the periphery of the ovum which is in direct contact with the decidua vera. Here the chorion villi develop still further and form the placenta.

Cystic degeneration of the chorion villi is characterized by a hypertrophy, and their conversion into cysts vary in size from that of a millet seed to the size of a grape or even larger. They are connected with one another and with the base of the chorion by pedicles of varying length and breadth. It is further distinguished by the rapid growth of the ovum, the consequent expansion of the uterus usually at the third to fourth month, by the escape of blood from the uterus and premature expulsion of the ovum. Within the cavity of the ovum may or may not be found an embryo.

The process usually begins at a time when the villi are almost equally developed over the whole ovum, that is before the third month. Thus the process is equally distributed showing no evidence of where the placenta would be situated. Exceptionally the placenta alone is

affected, the disease having begun after the atrophy of the extra-placental portion.

Pathology.—The appearance of the hydatidiform mole is peculiar. This mass may be as large as a man's head and completely covered with deciduae, and is seen to consist entirely of small cysts connected with each other or with the chorion by pedicles of varying length and thickness.

The fluid in the cysts is clear and translucent, and contains mucin and albumin in large quantities. Within the center of this mass is usually found a shriveled fetus, surrounded by its amnion which may contain an abnormal quantity of fluid.

If the degeneration of the chorion is not too extensive, a living infant may be born. Frequently the enlarged villi of the chorion perforate one or both deciduae.

Specimens have been described where these villi penetrate the muscular walls of the uterus, even through the peritoneum. The relation of myxoma of the chorion to syncytial cancer is quite intimate.

Clinical history and diagnosis: There are three prominent symptoms associated with cystic degeneration of the chorion.

1. Rapid increase in the size of the uterus.
2. Discharge of bloody serum and blood.
3. The escape of vesicles.

The last is of rare occurrence and the other two do not always appear in a typical manner, so the diagnosis is not easy. If there is an escape of blood at intervals during the early months of pregnancy, if the uterus rapidly increases in size during the third month and careful palpation elicits no sign of the presence of the fetus in the uterine cavity, the existence of cystic chorion may be suspected. The degenerated chorion usually determines the expulsion of the ovum, sometimes between the third and the sixth month; however, if the disease does not begin until late, the pregnancy may proceed to term.

Again if the embryo is absorbed and the chorion becomes adherent to the uterine wall, pregnancy may be abnormally prolonged. This latter may lead to serious consequences by the villi perforating the uterine wall, and when the mass is expelled there may be a rapid and fatal hemorrhage from the uterine sinuses. The retention of a portion may be followed by decomposition and septicemia.

The treatment is mainly symptomatic; in case of hemorrhage, it may be necessary to tampon the vagina until the os is sufficiently dilated to permit the expulsion of the mass; if palpation can give no evidence of a fetus, abortion should be induced to prevent the overgrowth of the mass and the consequent perforation of the uterus. Great care must be taken in the removal of any retained masses, as the

uterine walls may be very thin in circumscribed areas and the danger of a perforation is imminent.

Case Report. Mrs. C, age thirty-nine, German, mother of eight living children, the youngest one year old; has had two previous miscarriages which she claims both followed a slight injury from lifting. Could not learn whether there was anything unusual in either case; has always had considerable trouble with nausea and vomiting during the early months of pregnancy.

Present pregnancy about as usual up to nearly four and one-half months; at this time there was a discharge of blood and mucous. This occurred daily, and always seemed worse toward evening; some days the discharge was considerable and other days very light.

I first saw her the evening of March 17, 1912. Examination showed the uterus enlarged about the normal amount, and as she is rather a thin woman, the outline of the fetus was easily determined. Examination of the cervix showed the os not dilated, and I even considered it more rigid than normal. It was quite easy to rule out an extrauterine condition, and the condition of the os would hardly lead one to consider it a case of placenta previa. I considered an abortion inevitable; however, I ordered rest in bed for the present.

I again saw her March 28, when the condition was the same; no dilation and no pain; uterus some larger and fetal movements present. I did not see her again for a month, but heard from her every few days. The condition remained about the same; fetal movements were very active and the discharge still present. Some days it was very slight, and other days a large amount, especially toward evening.

The evening of April 26, seven weeks after the beginning of the symptoms, I was called to see her in a hurry. Just a few minutes before I entered the fetus was expelled, and the large mass which I have here. This mass was entirely free from the placenta and its membranes, and had the characteristic cystic appearance.

The baby was developed normally to about six months, and lived at least twenty minutes. The placenta was somewhat adherent, but was detached without any great difficulty. I examined the uterine cavity for more of the cystic mass, but found none.

The patient was somewhat weak after this and was troubled with a cough that developed during her illness. She was rather slow in regaining strength, but otherwise made a good recovery.

EASY.

Lady to small boy who is fishing, "I wonder what your father would say if he caught you fishing on Sunday?"

Small boy, "I don't know, you'd better ask him. That's him a little farther up the stream."—Literary Digest.

ECLAMPSIA.

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Eclampsia may be defined as a series of convulsive movements of the entire body, with loss of consciousness followed by coma. It may occur during pregnancy, labor, or in the puerperal period.

The cause of eclampsia has not yet been determined; in fact, as Zweifel says, eclampsia may be said to be a disease of theories.

The toxic theory first suggested by Vircow in 1848 explains the lesion usually found in the kidneys of eclamptic patients as being due to the irritation of the renal cells by toxins in the blood and, hence, eclampsia is not caused by a primary kidney lesion but by the irritation of said toxins.

Dr. LeFevre, Professor in Bellevue Hospital Medical College says that only 3 per cent of nephritic pregnant women suffer from eclampsia during pregnancy and, hence, we conclude that eclampsia occurring in certain pregnant women must be due to the irritation of the kidney cells by toxins in the blood resulting in the kidney of pregnancy and eclampsia.

Another theory has been ably advocated by Prof. Stroganoff of St. Petersburg. He says in the J. A. M. A. of November 12, 1898, that eclampsia should be included among the infective diseases giving as his reasons:

1. That it is a general disease affecting all parenchymatous organs.

2. That it is an acute infection commencing explosively or after a certain prodrome.

3. The fever that occasionally accompanies it, especially the post mortem thermic elevation, is peculiar to an infective disease.

4. One attack confers immunity.

5. Marked genus epidemicus in 1897—25 per cent died, while in 1898 there was no mortality in nineteen cases.

6. It is impossible to explain the increase of eclampsia in populous centers otherwise than by accepting the theory of its infective character.

7. In the J. A. M. A. of September 20, 1902, Prof. Stroganoff reports ten cases of eclampsia occurring in the early months of pregnancy in which after the cessation of the eclamptic seizures, the pregnancy continued to a normal termination. This phenomenon he says could scarcely occur if the eclampsia were due to the toxins generated by the fetus.

Although the premonitory symptoms of eclampsia may be absent, the first attack is usually preceded by nausea and vomiting, restlessness, weariness upon exertion, mental irritability, headache, disturbance of

vision, dizziness, muscular tremor, ringing in the ears, the appearance of albumen and casts in the urine with edema of the hands and face, severe epigastric pain. In addition to the above premonitory symptoms, I believe we shall find increased blood pressure an early sign of threatened eclampsia.

In the November, 1911 Surgery, Gynecology and Obstetrics, Dr. H. C. Bailey of New York in discussing blood pressure as an index of threatened eclampsia says, that in 1136 systolic readings on 145 women made in Bellevue Hospital of New York, he found the average blood pressure of pregnant women to be 118 M. M. Hg. He found that many women have an irregular range of blood pressure varying from 25 to 30 M. M. Hg. above the normal. Examinations of blood pressure in early toxemia were invariably low but in the developed toxemia of the later months of pregnancy there is usually present a blood-pressure-raising principle. However, he has known eclampsia to develop with a blood pressure as low as 155 M. M. of Hg. From an analysis of the blood pressure readings of many observers 150 M. M. of Hg. may be taken as a danger limit and any pressure above this should demand vigorous treatment.

Finally we have the sudden attack which consists of convulsions of the entire body, loss of consciousness, and coma, followed in a short time by a repetition of the process.

Prof. Stroganoff's theory that eclampsia is of infective origin and that one attack confers immunity is at variance with the ideas of Dr. James B. Herrick of Chicago who assumes it to be of toxic origin and who says that while all our pregnant women should receive careful attention that the woman who has had eclampsia in some previous pregnancy should receive our especial care.

Our treatment will depend upon our conception of the cause of eclampsia as well as the stage of pregnancy, labor or the puerperium in which the eclampsia occurs.

In the J. A. M. A. of July 3, 1909, Prof. Stroganoff in discussing the treatment of eclampsia says, "I know of no disease in which therapeutic measures display more brilliant results than in eclampsia" and he urges the more general adoption of his technic viz. administration of oxygen in abundance, keeping the patient under the influence of morphine and chloral with chloroform at first until patient feels the effects of the chloral and morphine, emptying the uterus if these are not effective. Prof. Stroganoff says that 800 patients have been treated by his method in Russia and elsewhere and that the mortality in his own 400 cases has been only 6.6 per cent which I think is the lowest mortality recorded.

The conservative treatment of eclampsia is discussed by M.

Steiger of Dublin in a recent number of the J. A. M. A. He reports 66 cases in which Stroganoff's treatment modified by giving morphine plus atropine instead of chloroform and chloral as being less injurious to the heart, resulted in a mortality of only 9.9 per cent.

Dr. Potter of San Francisco reports a case of puerperal eclampsia in which he gave 20 drops of Norwood's Tr. Veratrum Viride hypodermically every hour for five consecutive days and nights and the patient made a good recovery.

Dr. Ellingwood of Chicago recommends pilocarpin to increase elimination of urea. He says it helps also to increase the anti-spasmodic influence of veratrum, chloral and other remedies. He says that veratrum is the safest of our active remedies in eclampsia.

A recent interesting observation has been made by Healy and Kastle of the Kentucky Agricultural Experiment Station. They have decided that the milk fever of cows is due to the production in the udder of a toxin that rapidly poisons the system and they have succeeded in reducing the mortality very much by injections of oxygen in the udder to distend the tissues and then strapping same to make pressure on the blood vessels thus lessening the activity of these glands, and, hence, the production of toxic material.

They suggest that eclampsia of the human female is of similar origin. Acting on this suggestion Dr. Espy Williams of Patterson, Louisiana, reports a case in the J. A. M. A. of August 17, 1912 as follows:

White patient, age 27; first pregnancy and labor occurred two years ago and were normal. Second labor lasted three hours when patient was delivered of a living child; first convulsion occurred six hours after delivery at which time he found the patient completely comatose, pulse 140, temperature 102½, bladder contained two oz. of highly albuminous urine; treatment hypo of ¼ gr. morphine and ten minims Tr Veratrum Viride ten ounces of blood were taken from the arm, ten grains of calomel and one-fourth grain elaterium were forced down the throat—hot packs and proctoclysis with normal saline solution were employed, each breast was completely filled with oxygen and then tightly strapped down. After the above treatment only two slight convulsions occurred and recovery was progressive and uneventful.

Another case is reported by Gilles and Ducireg in J. A. M. A. of May 4, 1912. In this case the eclampsia developed suddenly without any premonitory symptoms beyond slight albuminuria which had persisted through the pregnancy unmodified by the restriction to a milk diet etc. Both kidneys were probably in cystic degeneration a nephrectomy having been contemplated before the onset of pregnancy. There

was no hemorrhage but the convulsions continued after delivery of a dead foetus at term, the patient in profound coma; in the intervals, the temperature going up to 103 1/10, the pulse uncountable. No relief was obtained from the usual measures viz; venesection of two pints, purges and lumbar puncture. The patient had had 55 convulsions in less than 24 hours. A trocar was introduced into the breast and oxygen and air were injected into the submammary cellular tissue. Improvement was evident in 30 minutes, the pulse became stronger and 160 could be counted; the temperature dropped a little; four hours later the injection was repeated and the intervals between the seizures grew constantly longer and the patient gradually recovered.

In the February, 1912 number of The Journal of The Tennessee State Medical Association, Dr. W. D. Haggard of Nashville reports three cases of Caesarean section for eclampsia, the operations being successful and all the children saved.

In the J. A. M. A. of June 13, 1912, Dr. John F. Moran of Washington D. C. reports having collected a history of 116 cases of abdominal Caesarean Section in eclampsia with a maternal mortality of 49 per cent but many of the patients had been subjected to other treatment and were moribund at the time of operation.

In the J. A. M. A. of February 3, 1912 DeBovis says the mortality in ninety-two cases of puerperal eclampsia treated by decapsulation of the kidneys was 38 per cent and he thinks the reports to date fail to confirm any beneficial action from decapsulation of the eclamptic kidney. On the other hand Bar and Commandeur in the J. A. M. A. of March 2, 1912 say that decapsulation with or without nephrotomy still deserves a place in the treatment of post partum, eclampsia, when there is persisting anuria and serious disturbance in the secretion of urine.

I have attended the following cases which I wish to report.

Case No. 1. This woman was a multipara having had seven children, her labor normal in each case. She evidently had none of the premonitory symptoms for, although, I reached the house in about half an hour after being called she had already had one convulsion. Another soon followed in which I delivered her of a living child. The convulsions continuing I used hot packs, gave chloroform and veratrum. Under this treatment the convulsions became less frequent and the patient made a gradual and uneventful recovery. The urine contained albumen for about two weeks.

Case No. 2. A primipara six and one-half months pregnant. Patient in excellent health during early months of pregnancy but nervous, no nausea, specific gravity of urine 1010 but no albumen up to time of the attack, which was immediately preceded by general rest-

lessness, edema of the face and hands, gastric pain, nausea and vomiting, with severe headache. Convulsions began shortly after the second administration of a Hypodermic of morphine, Hyosine and Cactin Co. (Abbot) given to quiet pain in the head. The convulsions continued at short intervals for eight hours during which time the usual remedies, chloroform, hot packs, and veratrum by mouth were used without effect. Drs. Root and Tyndale were called in consultation and all attempts to produce elimination and control the convulsions failing, the uterus was emptied, after which the patient had but two convulsions, regaining consciousness in a short time. The urine contained albumen and casts and was some time in clearing up. In this case the breasts were abnormally developed and I have since thought that possibly the toxic condition originated in them and that compression might have aided in controling the convulsions.

Case No. 3. A multipara, labor normal. Thirty-six hours after delivery I was called and found the patient in coma following convulsion. At the first sign of a second convulsion a towel was slipped between the patient's teeth (which is always advisable) to prevent her biting her tongue, and chloroform was given. In the next few hours I gave veratrum by mouth, which she vomited, then pilocarpin 1/100 grain hypodermically, used hot packs hypodermoclysis of normal saline solution, gave chloroform almost continuously; at Dr. Herrick's sug gestion 60 grains chloral hydrate per rectum which was not retained; all without materially lessening the force and frequency of the convulsions. I finally gave Norwoods Tincture Veratrum Viride hypodermically in 8 drop doses and in thirty minutes reduced the pulse from 150 beats per minute to 50, and found that by keeping the pulse at 70 or below I could control the convulsions. It was necessary to continue this treatment for several days but finally the patient who had been unconscious for 72 hours or more regained consciousness, the urine which had been highly albuminous cleared up, and the patient made a complete and uninterrupted recovery. This patient had had premonitory symptoms during pregnancy—no albumen, but some edema and a blood pressure of 180 M.M. of Hg.

In all these cases the administration of Veratrum Viride has seemed to me to secure better results than any other remedy I have tried.

To sum up; when called to a case of eclampsia during pregnancy, we should give veratrum to lessen blood pressure and control the convulsions; secure free elimination; adopt a strict milk diet; if the breasts are large and active treat them by compression; and if these measures fail and the case is not far enough along with pregnancy to give birth to a living child we should dilate the uterus and empty it of

its contents. Should the patient be in the latter months of pregnancy we should consider Caesarian Section in an effort to save both mother and child.

Should we be called to a case of eclampsia during labor we should hasten labor as much as possible while using the usual means to control the convulsions.

Should we be called to a case of eclampsia after labor we should secure free elimination by the use of calomel, pilocarpin, etc., control the convulsions with hypodermics of veratrum viride and the other remedies suggested as sedatives and antispasmodics.

In conclusion: We should use every justifiable means to impress upon our pregnant women the importance of care in their condition, and try to educate them up to the point where they will put themselves under the care of their physician during the early months of pregnancy.

CATHARSIS.

First giving an account of the physiology and bacteriology of the intestines, E. P. Quain, Bismarck, N. D., (Journal A. M. A., July 6), says that the function of peristalsis is not limited to the propulsion of intestinal contents but also aids in causing circulatory changes aiding absorption and a more rapid assimilation of absorbed products. Hence, if pathologic products exist in the intestines, increased peristalis may aggravate the symptoms and in acute inflammations within the abdomen, nature's effort is to subdue peristalsis about the infected region. Hence nothing should be done to increase it. He criticizes the common use of salines as tending to destroy the bactericidal properties of the intestinal secretions, and calomel comes under similar condemnation to some extent. When a cathartic is necessary oil is probably the least harmful to the mucosa. An internal secretion stimulating peristalsis has been obtained from the gastric mucosa and from the spleen, and when it can be isolated it promises to become the physiologically ideal intestinal evacuant. Search of his clinical records shows him that all fatal cases of acute appendicitis, with or without surgical intervention, had, without exception, received and retained some active cathartic at the beginning of the disease, while abdominal inflammations similarly unpromising that recovered had not suffered from the factor of purgation. It has become his custom to inquire at once in all these cases whether or not any physic has been taken, and the knowledge thus gained has been of great importance to him in prognosis. He has also noticed that patients coming for abdominal operation in emergency without previous preparation suffered less from gas distention than those that had been carefully prepared beforehand and this he has attributed to the use of cathartics in the preliminary treatment. The food he finds passes rapidly through the stomach and small intestine but remains from twenty-four to forty-eight hours in the cecum. A certain equilibrium between the physiologic and bacterial processes is essential for normal bowel function and saline cathartics disturb this poise to a large extent. After the intestinal mucosa has been depleted by cathartics it takes some time for it to recover its energy and in the meantime bacteria flourish. Intestinal antiseptic is dubious, a comparative asepsis is practical. For artificial evacuation of the large bowel no drug acting on the small intestines is required. High rectal injections are efficient. Patients prepared for laperotomies by restricted diet and rectal injections have much less post-operative trouble than those that have been purged.

TWO CASES OF PELLAGRA IN STORY COUNTY.

F. S. SMITH, A. M., M. D., NEVADA.

Pellagra is defined as a periodic, progressive, non-contagious, non-inheritable disease or condition, of a very insidious course, characterized by a peculiar periodic eruption, and a series of symptoms involving the nervous, cerebral, spinal, digestive, and cutaneous systems. The prominent symptoms usually begin in the early spring, with headache, vertigo, languor and depression of mind and body anorexia, salivation, stomatitis, and a swollen, red, raw tongue seeming to be denuded of its epithelium, and an obstinate diarrhœa.

The erythema usually begins on the back of the hands, back of the neck and over the face; the parts exposed to the sunlight, but does not entirely cover the parts exposed. At first it resembles a sunburn or a burn of the first degree, but soon changes to a brown color with a tendency to be harsh, rough and cracked. The cerebral symptoms may be vertigo, convulsions, confusional insanity and various grades of dementia, from a slight moody irritation, to active insanity.

The final stage is one of wasting and cachexia, terminating with exhausting diarrhœa.

The prominent diagnostic symptoms are: The erythema, turning to a rough brown color and not entirely covering the part, the bald, red, eroded tongue, cracked and swollen lips, salivation, diarrhœa, lassitude, bodily and mental weakness and depression, and an exaggerated knee jerk.

The disease has been mistaken for some unusual form of tuberculosis, syphilis, malaria, acute delirium, hook worm disease, eczema, leprosy, Addison's disease and myxoedema.

The cause is not positively known. The various theories will not be discussed in this report. The foregoing description of the disease has been mostly gleaned from the literature found in the medical works and magazines.

Case 1.—F. W. S., male, farmer, aged 47. I have no full notes of this case and must rely on memory. He first came to me May 2, 1911; and I saw him several times during the spring and summer, and once early in the spring of 1912.

He complained of sore mouth, salivation, swollen, red, raw tongue, swollen, boggy gums, bleeding easily, lips swollen and cracked. He was feeling very weak and depressed. Seemed to have lost all vim and ambition. There was a brown rough eruption over the back of hands and wrists.

At the time I failed to recognize the disease as Pellagra and called it stomatitis. Afterwards in reviewing the case I concluded it was Pellagra. Since I saw the case he has been under the care of Dr. D.

M. Ghrist, of Ames, Iowa, who arrived at the same results, Pellagra.

He is better now and will be comparatively well until next spring when probably it will recur. He has never been fond of corn as a food. He lived for several years near the flats of Skunk river bottoms.

Case 2.—Mrs. E. W., age 28, housewife; religion Adventist. Born in Warren County, Pa. Lived in Pennsylvania until seven years ago, when she came to Iowa, where she remained four years, then went to Northeast Colorado, where she remained two years, returning to Iowa early in 1911, where she remained until November, 1911. Last winter she spent in Texas returning early spring of 1912.

Her diet throughout life has been mainly vegetable, meat being seldom used.

While in Colorado she lived almost entirely on potatoes, bread and hominy.

Previous diseases: Has had the usual diseases of childhood, besides "bilious fever" and typhoid when 15 years old. Her general health and strength has never been good. Menstruation irregular. Married Jan. 1, 1906. Has had four children and one two-month abortion within five years.

No history of venereal trouble.

Present complaint: Patient came to me May 17, 1912, complaining that her hands were becoming darkened and rough, that the tongue and mouth were sore, and that she had a severe chronic diarrhœa.

Upon further questioning, she said that two years ago while in Colorado, her bowels became very loose and with occasional remissions have been loose ever since; that in June, 1911, her hands and forearms became darkened; that blisters symmetrically arranged came around her mouth; that an oval area of pigmentation and scaling came on the back of the neck; that these areas cleared up during the summer, but returned this spring. About one year ago she suddenly lost acuity of vision, cannot make out small points, but peripheral vision seems good. At the same time her hearing became impaired. Early this spring the pigmentation reappeared on the back of hands extending over the wrists and up four inches on the radial side of the arms; another area appeared on the back of the neck; her diarrhœa became worse; her tongue was bright red and very painful; there were tingling sensations and numbness of the extremities; her appetite became poor; she became apathetic and while her mentality was fair, still there was a degree of mental weakness.

Physical examination: She appears weak and emaciated, color bad, the skin appears pale and pasty, her expression is listless as if she had ceased to enjoy life. The eyes are particularly interesting; the pupils are equal, regular and somewhat dilated; the direct and

consensual reactions are present and equal, but sluggish; accommodation and convergence are normal; retinoscopic examination shows evidence of probable bilateral optic atrophy; her visual acuity is very poor, she cannot see any definite point, but she can see the outlines of any large object, showing the peripheral vision to be only slightly impaired.

The tongue is large, flabby and fissured, the epithelium is desquamated, leaving the tongue bright red. Her sense of taste is poor and the tongue and mouth painful. There is considerable salivation. Lungs are negative. The heart not hypertrophied, but there is a blowing systolic murmur heard at the apex and transmitted to the axilla; the pulmonary second sound is accentuated.

The liver is palpable one inch below the costal margin and is tender. The right kidney is easily palpable and movable. The left kidney and spleen normal. There is a general visceroptosis. The belly walls lax, there is considerable gastroptosis the greater curvature being two inches below the umbilicus. The ulnar half of each hand is cold; there are scattered areas of hyperesthesia arranged symmetrically on both arms and lower limbs. The radial pulse is regular and full, rate 80. Temperature normal.

The hands have the appearance of being sunburned, having a peculiar reddish brown scaly appearance. The skin is thickened and tough.

There is a symmetrical oval area (3 in. x 6 in.) on the back of the neck, too low down to be exposed to the sun's rays.

All the normal reflexes are present, equal and very lively. There are no pathological great toe reflexes and no Rhombergism.

(Later, the eruption has now nearly exfoliated and the parts are returning to normal color. The tongue is nearly well and general symptoms improved in every way, excepting the optic atrophy.)

OVERPOWERING.

"Is you gwine ter let dat mewel do as he pleases?" asked Uncle Ephriam's wife. "Wha's yo' will power?"

"Ma will power's all right," he answered. "Yo jest want ter come out hyar an' measure this here mewel's wont power."—Literary Digest.

FRESH AIR.

She: "I am almost baked. I have been shut up in a close, stuffy room for two hours."

He: "What was the occasion of that?"

She: "A meeting of our Fresh Air Society."

—*September Lippincott's.*

CLINICAL PATHOLOGICAL SIGNIFICANCE OF CHOKED DISC.

C. F. HOWLAND, M. D., DES MOINES, IOWA.

Certain conditions of the fundus oculi are of pre-eminent interest and value in the diagnosis of various general and nervous diseases presenting themselves in the fundus in the following:

vascular lesions,
anemia,
hyperemia, pulsations, edema,
inflammation of the vessel walls,
hemorrhage from the vessels,
embolus, thrombosis,
inflammation of the retina,
inflammation and edema of the optic nerve, i. e. neuritis and choked disc.

Affections of the optic nerve may be grouped into three classes.

First class, ascending neuritis, or true inflammation of the optic nerve, as in tabes where the peripheral fibers of the optic nerve and fibers of the retina first become involved, as has been proved by Wagemman.

Second, affection of the head of the optic nerve alone, in the form of an inflammation or simple edema.

Third, descending neuritis originating from intracranial diseases affecting the optic nerve or sheathes by continuity.

Exudations pass directly from the meninges to the optic nerve because of the close proximity of the optic chiasm to the perforating cerebral vessels. For the same reason this form of optic nerve inflammation is frequently combined with third nerve paralysis.

Some care is needed to distinguish papillitis with moderate swelling due to a great variety of causes, mostly of a constitutional nature, from a papillitis with a pronounced swelling with more than two dioptres associated with increased intracranial pressure, hence choked disc is an arbitrary expression denoting a swelling of the papilla of over two dioptres.

Van Graefe was the first who associated choked disc with increased intracranial pressure. His explanation was that it was a result of compression of the sinus cavernosus. This explanation had to be given up since Sesman had proved that the return circulation from the ophthalmic vein mostly took place through the posterior facial veins. At present there are two theories on the production of choked disc. First, the Manz Schmidt Rimpler—the pure mechanical theory. Second, Lebers inflammatory theory.

Read before the Polk County Medical Society, Des Moines, October 29, 1912.

Before going into this theory I will make a partial review of the histological anatomy of the entrance of the optic nerve into the eye. Remember, in order for the fibers of the optic nerve to get into the inner layers of the retina they must perforate the channel through the sclera, the supporting tunic of the eye; the choroid, the vascular tunic; the retina, the visual tunic. This channel is called the foramen sclera. The entire length of the optic nerve from its cranial origin down to its intraocular portion is surrounded with meningeal coverings of the brain with their subdural and subarachnoid spaces which end blindly in the sclera. The behavior of the sclera deserves special attention. The external layers curve out and become continuous with the dura. The internal fibers bridge across the optic nerve in interlacing bundles. This set of fibres has a special function and hence a special name, the laminacribrosa. It is here that the optic nerve fibres give up their medullated sheathes. Second, it represents the place in the optic nerve where normally the fibres of the nerve, themselves, are compressed. Thirdly, it represents the place of least resistance of the eyeball, to pressure. Its fibres take a transverse direction and any pressure from within the eyeball pushes it backward. Hence it is the actual agent in the production of glaucomatous cup. Any pressure from behind causes it to bulge forward as is seen in choked disc. The bifurcation of the fibres of the optic nerve behind the level of the retina gives rise to a central depression in the nerve head, the so-called physiological excavation. It is important to remember that it is always partial, never taking up the width of the optic nerve entrance, and its shape and size depends upon the size of the foramen sclera. If the latter is narrow the optic nerve fibres have little space in which to bifurcate with a result of a condition known as pseudo neuritis, of very difficult diagnosis to make in hyperopia or short eye where the retinal vessels because of lack of space become very tortuous. Certain physiological conditions of the brain must be considered here. First, the skull is a sealed box with but two outlets, the optic nerve sheath, and the spinal cord. Second, the quantity of spinal fluid present within the skull is in such small quantities that its ebb and flow is inadequate to counteract the larger changes of volume found by experimental proceedings in the intracranial vessels. Third, the ocular circulation is part of the intracranial circulation hence the retinal circulation is an index to the condition of the introcranial circulation. In animals the ocular circulation is extracranial. The mechanical theory of choked disc is founded upon the discovery of Schwabs that the meninges are continued over upon the optic nerve. The result is that an increased pressure in the brain must spread out equally in all directions and hence reach the papilla. We find three pathological

changes at the papilla. First, the lymph spaces between the nerve sheathes are dilated. Second, there is swelling of the papilla, and third, there is passive congestion. Clinically you may find the vision normal for several months with the exception of possibly a few moments of poor sight. Hence the importance of making an early diagnosis of so important a condition which may lead to secondary atrophy and possibly complete blindness. A well developed case of choked disc is easy of diagnosis but in the beginning stages it is often hard to differentiate from a beginning neuro retinitis. Characteristics for the early diagnosis of choked disc are, first, a beginning swelling on the nasal side of the papilla, dependent upon the fact that normally more fibers pass out to the nasal side of the disc to macular region. Second, the papilla is sharply outlined and elevated above the level of the retina and the vessel begins to kink, contrary to the condition found in optic neuritis where the papilla is unsharply outlined, due to exudation in the retina. Third, the preservation of the physiological exudation due to the absence of inflammatory exudate, while in optic neuritis the cup early becomes obliterated. Fourth, the passive congestion is present in the choked disc where there is an active congestion in the optic neuritis. Fifth, there is practically entire absence of visual disturbances in the choked disc while in the optic neuritis the visual disturbances appear early. In the choked disc we find an enlarged blind spot of peripheral contraction of the visual field. The latter is an important index to the amount of pressure surrounding the nerve.

A very characteristic early symptom of choked disc is the presence of radial stripes emerging from the nerve. These correspond anatomically to the foldings of the retina caused by the edema pushing the normal retina away from the disc.

The character of the growth in the production of choked disc depends upon whether the tumor is an infiltrating, compressing, or substituting growth. Sarcoma is a compressing growth. Glioma is an infiltrating growth, while tuberculosis should be considered a substituting process. Hence from a mechanical standpoint the choked disc appears in the order just quoted. Not much stress can be laid upon the possibility of localizing the tumor from the eye which presents the greatest degree of choked disc; one of the examples being the acusticus tumor where choked disc becomes a primary symptom and the eye in which you find the greatest amount of pathology represents the side of the brain in which you would expect to find the tumor.

As regards location, tumors of the posterior fossa most often cause choked disc. This is probably due to the enveloping of the cerebellum in a special sheath. This sheath being only slightly yielding, and under normal conditions the tensions in the posterior fossa being slightly

elevated, the compression would lead to stagnation in the anterior ventricals which would be quickly noted. Tumors of the convexity of the cerebellum do not so readily cause the congestion. Tumors at the base of the brain rarely cause choked disc. This is beautifully illustrated in the more recent investigations of the hypophysis tumor where a simple pressure atrophy, results. In examining several hypophysis cases I saw only one choked disc. In finding a unilateral choked disc one must always think of an orbital tumor. Uhthoff in 204 cases of choked disc, which he had examined clinically and which he was able to follow to autopsy, gives the following statistics of the occurrence of choked disc:

brain tumor 134,
syphilis 27,
tuberculosis of the brain 8,
brain abscess 7,
hydrocephalus 7,
meningitis 2,
cysticercus 2,
sinus thrombosis 2,
deformities of the skull 3,
nephritis 3,
lead intoxication 1,
anemia 2,
uncertain diagnosis 4.

Although you see the greater part of the cases were caused by brain tumor, yet a fair proportion occurred in cases which are seen almost daily by the general practitioner. Nephritis can produce a typical picture of choked disc. I have seen it proved twice at the post mortem table where the diagnosis of tumor had been made solely on the findings of choked disc, that the diagnosis was incorrect, the case proving to be contracted kidney. It is impossible to distinguish a choked disc of nephritis from that of tumor. Several cases with a typical star figure formation, which had been diagnosed as retinitis albuminuria, proved at autopsy to have been caused by brain tumors.

Cushing has recently worked up the subject of intraocular complications in relation to nephritis, and explains choked disc as being the result of toxic vasal motor changes in the brain and has suggested lumbar puncture as a temporary relief from impending blindness. Unfortunately, when fundus changes occur in the course of nephritis a serious stage of the disease has been entered, contracted kidney being most frequently present.

Finally there is a very rare form of choked disc, which has been found in young girls at the time of puberty associated with amenorrhea, which leads to rapid blindness in a short period of time. In two of these cases reported by Lauber, there was found a partial atrophy of thyroid. Whether this condition eventually will be found associated

with the disturbance of some internal secreting organ, or be classed with one group of pathological changes of the hypophysis, is a matter for further investigation.

In regard to case reported by Dr. Ryan, I was asked to examine this lady about 36 hours before her death and found the following: An entire absence of any discharge from either ear or history of her having had any previous trouble with the ear. There was no nystagmus present. The pupils were dilated which might be explained by the patient previously having had atrophine. The fundus showed a typical picture of choked disc. The macular region and retina being entirely free from any signs of exudation. I could only suggest that it was a true pressure case, the cause being indefinite.

ALUMNI CLINICS, COLLEGE OF MEDICINE, STATE UNIVERSITY OF IOWA.

The fifth Alumni Clinic of the college of medicine of the State University was held at Iowa City on October 22 and 23, as a formal opening of the new wing which has just been added to the University Hospital. The clinics were of an unusually interesting and instructive character.

The clinics were opened by an address of welcome by John G. Bowman, President of the University, and Dean James R. Guthrie gave a very interesting address on the History and Growth of Medical Education at Iowa City. The remainder of the forenoon was given over to visiting the hospital. The wing which has just been completed is designed chiefly for teaching purposes, and includes a surgical amphitheatre, two small operating rooms, an especially well equipped medical research laboratory, a clinical laboratory, and reading rooms all on the upper two floors. The basement floor contains a magnificent suite of rooms for hydro-therapy and massage treatments, X-ray, and electro-therapy.

Two floors of the new wing are occupied by patients, and a large sun room is built on the roof, which gives an outlook over the whole city.

The arrangement and equipment is one which will be of great benefit for the proper education of the medical student, and will greatly increase the usefulness of the hospital in the better care of the patients.

The surgical clinic was given Tuesday afternoon by Prof. Jepson, and in his most interesting and enthusiastic way he presented several series of unusual and instructive cases, the differential diagnosis, the difficulties of diagnosis, and treatment of the cases in each series be-

ing fully gone over. Among those presented were a series of tubercular peritonitis; another series consisting of four fractures of the tibia, and another of gastric ulcers. Following the presentation of these most interesting cases, Dr. Jepson held an operative clinic for the remainder of the afternoon.

Medical Clinic—Dr. A. W. Hewlett.

Wednesday, October 23, 1912.—Dr. A. W. Hewlett, Professor of Medicine of the University of Michigan, held a medical clinic at 9 A. M. in the medical amphitheatre of the hospital. The first case shown was that of an acute febrile illness in a young man, age 22, with a previous history of tuberculosis. After two or three weeks of malaise there was a rather sharp onset on September the 19th with cough, pain in the side, and fever. The examination revealed a temperature of 103° to 104°, a pulse of 90, and respirations 25; slight immobility of the lower right chest, impairment of the percussion note, and few fine crepitant rales. The spleen was palpable. There was considerable pain referred to the right supraclavicular region, cough, and some rusty sputum. There was no leucocytosis but the Widal was negative.

A diagnosis of a *central lobar pneumonia* was made. Dr. Hewlett discussed the difficulties of early diagnosis of many acute febrile conditions in the young, particularly in the first three or four days of illness.

The next case shown was a typical case of *pernicious anaemia* with three previous attacks with remissions. The present one, the fourth attack, began with the usual symptoms of weakness, breathlessness and pallor. In addition to the characteristic color, the blood picture showed a very severe anaemia with plus color-index, a leucopenia, with an occasional normoblast and megaloblast.

The course and treatment of pernicious anaemia were then discussed.

Next, two cases of *poliomyelitis* were shown, one in a girl of twelve referred by Dr. Wolfe of Kalona, who presented a paralysis of the paraplegic type. She was one of a small group of six or seven cases from that locality.

The second was a student in the University, age 18, who showed a more diffuse paralysis, the extensors of both forearms, thighs and legs as well as the back muscles being involved.

The importance of an early diagnosis—if possible in the prodromal stage—was emphasized. The various advances in our knowledge of this disease were also discussed in an interesting manner.

Lastly, a case of *angina pectoris* in a man of about 55 years of age, a brewer by occupation who gave no history of syphilis but whose blood revealed a slightly positive Noguchi test. The attacks were

peculiar insofar as they appeared most commonly in the right hand, extending upwards to the right thorax. They always appeared upon exercise, often the slightest movement being alone responsible. There were evidences of arterio-sclerosis. Dr. Hewlett emphasized the importance of recognizing many mild types of the disease. He went so far as to say he believed that any sternal pain coming on after exertion in patients at a certain time of life, might be considered to be of an anginal character. The prognosis and treatment of such cases were fully given.

Thanks to the interest of the physicians of the state there were several other cases sent especially for the clinic, but owing to lack of time they could not be used.

Dr. Adami's Clinic.

Following Dr. Hewlett's clinic, Dr. George Adami, professor of pathology and bacteriology at McGill University, Montreal, Canada, gave an address on the subject of "Infection and Subinfection." He opened the subject with a discussion of latent infection — referring particularly to the large number of cases of tuberculosis which have been proved by autopsy not to be active, and which, as clinical experience has demonstrated, frequently become active after a period of latency. During the dormant state of the infective process the toxins of the bacilli do not gain access to the general circulation and do not therefore stimulate the production of antibodies. Such renewed activity of a tuberculous process occurs especially when the general vitality of the body is lowered as for instance by an attack of measles. He also referred to typhoid carriers as evidence of a type of latent infection. In such however the bacteria being found in the cavities of the body quite directly connected with the exterior as for example, the gall bladder, do not lead to a continued production of antibodies and consequently there is occasionally a localized infection.

Dr. Adami's remarks concerning subinfection were especially interesting since he was a pioneer in this line of work. By sub-infection he refers to a mild type of infection due to the entrance of bacteria into the body and a liberation of their toxins but without any multiplication of the bacteria. It is well known that leucocytes frequently wander out through the mucous membranes, pick up bacteria and then wander back through the mucous membranes into the tissue. When the mucous membrane is inflamed for any cause the number of leucocytes which wander out and in is very much larger than under normal conditions. With the introduction of a larger number of bacteria more toxins are liberated, and if such is continued for a long time pathological conditions may result, either as a result of the direct action of the toxins or as a result of the exhaustion of the defensive powers of the body

cells. As a result conditions of grave anemia even pernicious anemia are probably produced. Such has been demonstrated experimentally by the repeated injection of small doses of colon bacilli into a rabbit. It has also been possible to produce cirrhosis of the liver experimentally by first lowering the vitality of the liver cells by the use of chloroform and following this with the intravenous injection of colon bacilli. It is probable that the question of sub-infection is concerned with the etiology of cirrhosis of the liver in the human beings, the alcohol acting as an irritant to the mucous membrane of the intestine and causing more leucocytes to wander out and carry infective material back in again, and also by lowering the vitality of the liver cells; alcohol therefore seems to act as a predisposing cause and the bacteria introduced repeatedly, even though in small doses, as the exciting cause.

Dr. Kerrison's Clinic.

The clinics were closed by Dr. Phillip D. Kerrison, professor of oto-laryngology of the New York Post Graduate College who gave a most interesting lecture on the subject of "Laberinthine Reactions." He reviewed the history of the development of the knowledge of the complex reactions of the labyrinth both normal and abnormal.

From the time of Ewald's experiment in 1892 until Prof. Robt. Berany discovered the caloric reactions of the labyrinth quite by accident seven years ago the labyrinth reactions were known and regarded as an interesting physiological phenomena and nothing else. Berany established the reactions on a practical clinical basis and achieved the triumph of the decade. Dr. Kerrison then went into detail explaining the various caloric reactions and their relations to the nystagmus movements of the eyes. He differentiated between the nystagmoid movements caused by cerebellar tumor and those caused by diseased conditions of the labyrinth. His lecture was illustrated by a number of charts and the normal caloric reactions were shown in a clinical demonstration.

Following the lecture Dr. Kerrison conducted a clinic, performing a simple mastoid operation and a radical mastoid operation. Dr. Kerrison was a most excellent speaker and operator. His work was enjoyed by every one present.

One of the most pleasant features of the clinic was the presentation, on the part of the Alumni, of magnificent oil paintings of two of the early members of the faculty, following the dinner given to the visiting members by the faculty on Tuesday evening. Dr. G. A. Smith, of Clinton, on behalf of the Alumni, presented the portrait of Doctor Farnsworth, Professor of Materia Medica from the foundation of the college to 1892. Dr. A. J. Hobson, of Hampton, presented the portrait of Doctor Clapp, Professor of Anatomy from 1871 to 1889.

In thus showing their appreciation and gratitude for the noble work of these two early Professors, the Alumni have not only honored them, but by linking the memories of the past with the events of today, they have firmly established a loyalty to their Alma Mater. The portraits will for ever be a means of bringing that loyalty to the student of today.

JNO. T. McCLINTOCK, M. D., Iowa City, Iowa.

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Vol. XIX Des Moines, November 15, 1912 No. 5

Owing to an oversight in the makeup of the Directory a part of Monona County was inserted in Monroe County. You will find a revised list in this number of the Journal, which you can paste over Monroe County, and thereby correct your Directory.

The Directory.

We can not refrain from mentioning the Directory of Iowa Physicians, issued last month by the Iowa Medical Journal.

A dozen insurance companies have already written for copies, showing that they appreciate what an up-to-date Directory of Physicians in Iowa means.

We have enjoyed the confidence of a large number of practitioners who have subscribed for the Journal in the last thirty days, due mostly to the Ocotebr issue (Directory) or to the knowledge that it was coming.

Next Month.

The subject of Goitre will receive special attention in the December Number of the Iowa Medical Journal.

On October 9, the Des Moines County Medical Society gave a

symposium on this subject and the papers have been forwarded us for publication.

Dr. J. T. Berry gives the "Anatomy of the Thyroid Gland;" Dr. Bertha McDavitt writes on "The Diagnosis of Hyper-Thyroidism." Dr. J. F. Herrick of Ottumwa gives the "Pathology" and Dr. Magee, "The Surgery."

In addition, Dr. T. F. Duhigg of Des Moines contributes a paper on Goitre.

County Hospitals.

The success of the movement to secure county hospitals in Scott and Woodbury Counties in the last election, deserves special mention, as encouragement is needed in many of the counties where they have not yet been secured.

The same argument for the hospital holds good now as in the past, viz.; better results to the patient and better endeavor on the part of the physician.

Where the issue in the campaign is separated from political questions and personal difficulties of the candidates, the people have been very friendly to it.

A new political force can be brought to bear now on its success—the women's clubs and the organized charities.

Preventative Hygiene.

Since the Congress on Hygiene and Demography, held in Washington last September, a new and unexpected activity has been manifest among the physicians in Iowa, led by those who were fortunate enough to attend.

One county, Mahaska, has already taken steps to hold a public health carnival in connection with the Farmers Institute in Oskaloosa, early in 1913.

Polk County will endeavor to stage some such exhibit during the winter, and will have some talent from the east as well as other towns in Iowa.

There are more things on the Health Calendar, that the laity are interested in, than the baby shows and the Bubonic plague. They are becoming mightily interested in knowing how to reduce Pneumonia, Tuberculosis, Typhoid Fever and other contagious diseases.

They have seen Diphtheria reduced from a scourge to the minimum by the use of antitoxin. They have seen Small Pox give way to hysterical quarantine.

They know but are not yet ready to credit fresh air with the les-

sening of Pneumonia and Tuberculosis to the extent of 12 per cent in the last five years.

They have listened to the talk on the Black Plague until they are in a mind to be convinced that something should be done.

They have looked upon idiocy, degeneracy and crime until they are ready to do something to protect the public.

It is only by producing overwhelming evidence that the lethargic intellect of those who will not see, may be aroused.

There are many forces now to help the physician fight this battle, where he stood alone ten years ago.

The women's clubs throughout the state, the county fair associations, and even the state itself, which seven years ago voted us a tuberculosis hospital and two years ago gave us a law for unsexing the criminal, are all ready to join hands in the forward movement.

SOCIETY REPORTS.

LINN

County Medical Society met in Cedar Rapids, October 3, and elected Dr. W. J. Morrison, President and Dr. C. L. Heald, Secretary.

BLACK HAWK

County Medical Society met in Waterloo, October 31. Nearly 200 physicians were present.

The afternoon program was as follows:

The Dietetic Treatment of Ileocolitis.....Dr. Clifford Grulee, Chicago
The Present Status of Wasserman Reaction.....Dr. F. Baumann, Chicago
Salvarsan in the Treatment of Syphilis.....Dr. E. T. Alford, Waterloo
The Treatment of Fistula.....Dr. J. Rawson Pennington, Chicago
The German Surgical Clinic of Today (Stereopticon lecture).....
.....Dr. Willard Bartlett, St. Louis

In the evening an elaborate menu was served by the management of the Ellis in the main room, after which the following program was carried out with Dr. C. S. Chase of Iowa City acting as toastmaster:

Invocation.....Rev. Ed. Slattery
The Baby World Citizen.....Dr. Margaret Clark
Impromptu.....Dr. H. M. Bradley
Selected.....Mrs. J. E. Brinkman
Hobbies and Breaking Some of Them to Ride.....Dr. George Hearst
Opportunity.....Dr. F. W. Powers
Giants.....Dr. A. Babcock
The Grippe.....Dr. J. E. O'Keefe
The Vacant Chairs.....Dr. T. U. McManus
Selected.....Mrs. Harry Sigworth
Impromptu.....Dr. V. L. Treynor

RINGGOLD

County Medical Society met in Mt. Ayr, November 7. The program was furnished by Des Moines doctors and the large gathering was appreciative.

Dr. C. E. Ruth gave his paper on "The Treatment of Fractures of the Femur;" Dr. M. L. Turner talked about "The Treatment of the New-Born;" and Dr. Thos. F. Duhigg read a paper on "Goitre." This last will be published in the Iowa Medical Journal in December.

SOUTHEASTERN

Medical Society has the following program for its meeting in Washington, November 21:

President's Address, "The Pancreas and Some of Its Diseases".....Dr. S. A. Spillman, Ottumwa

"The Continuous Sponge, the Surgical Safety Valve".....Dr. C. A. Boice, Washington

"The Value and Efficiency of the Tuberculin Tests".....Dr. H. V. Scarborough, Oakdale

"Prostatectomy, Indications For".....Dr. C. S. James, Centerville

"Differential Diagnosis of the Disease of the Upper Abdominal Quadrants".....Dr. C. P. Howard, Iowa City

"Treatment of Carcinoma of the Uterus"..Dr. F. M. Tombaugh, Burlington

"Early Education of Children".....Dr. Frank M. Fuller, Keokuk

Subject to be announced.....Dr. E. J. Wehman, Burlington

"Gastric Neurosis".....Dr. E. J. Edgerly, Ottumwa

"Paper".....Dr. A. S. Hague, Fairfield

"Fracture of the Spine".....Dr. Geo. F. Niblock, Derby

"Pre-operative and Post-operative Treatment".....Dr. C. F. Wahrer, Fort Madison

Four thirty P. M.—The new Jefferson County Hospital will be open for inspection by the visiting members.

DES MOINES

County Medical Society held its October meeting on the 9th, in the office of Dr. F. E. Koch, Burlington. A symposium on Goitre was arranged for and the following divisions of the subject were given:

Anatomical Relations of the Thyroid Gland.....Dr. J. T. Berry, Burlington

Pathological Anatomy of Goitre.....Dr. J. F. Herrick, Ottumwa

Hypothyroidism.....Dr. A. C. Moerke, Burlington

Diagnosis of Hyperthyroidism.....Dr. Bertha S. McDavitt, Burlington

Medical Treatment of Goitre.....Dr. Carl Stutsman, Burlington

Thyroidectomy.....Dr. G. H. Magee, Burlington

The papers of Drs. Berry, McDavitt, Herrick and Magee will appear in the December number of the Journal.

The November meeting was held on the 13th, with the following program:

Inguinal Hernia.....Dr. A. W. Sherman, Burlington

Femoral Hernia.....Dr. Chauncey Sherrick, Monmouth, Illinois

Umbilical Hernia.....Dr. F. B. Dorsey, Keokuk

Post-operative Hernia.....Dr. Carl Wahrer, Ft. Madison

JEFFERSON

County Medical Society was entertained at dinner, by Dr. and Mrs. W. H. Connor of Fairfield, October 4, after which Drs. F. M. Tombaugh of Burlington, W. Fordyce and J. S. Gaumer of Fairfield read papers on Typhoid Fever. Dr. and Mrs. Brockman and Dr. and Mrs. Davis of Ottumwa were guests of the society.

MAHASKA

County Medical Society met in Oskaloosa, October 18. Following a free discussion of Typhoid Fever, on which Drs. Clarke and Williams read papers, the matter of a Health and Hygiene Exhibit was discussed. We quote:

Mahaska County Medical Society has started something new. It proposes to hold a public health carnival or institute early in the year 1913. The program will include a week of exhibits, entertainment, lectures and instructions at some hall or building at which time speakers of national

and state reputation will speak upon topics of general health betterment, contagious, infectious and preventable diseases and general sanitation. The possibilities are almost without limit. In order to reach the greatest number of people it is proposed to hold the meeting in connection with the farmers institute. This will give people outside of Oskaloosa the benefit of the lecture program.—Herald.

CLINTON

County Medical Society, met at the Kehoe Grill Room, November 1, and listened to a paper by Dr. H. A. White, on the "Diagnosis and Treatment of Appendicitis."

The discussion was led by Dr. D. S. Fairchild and Dr. B. C. Knudsen, and was followed by all present.

CHICKASAW

County Medical Society held its annual meeting, November 7, at New Hampton. Fifteen members answered the roll call, and a good program was enjoyed. Election of officers resulted in the selection of Dr. H. D. Fallows, New Hampton, President, and Dr. Paul E. Gardner, New Hampton, Secretary.

JACKSON

County Medical Society held its annual meeting October 17, in Maquoketa. Drs. E. R. Lewis and A. M. Pond of Dubuque were present and read papers. Drs. A. B. Bowen, W. C. Post and J. O. Ristine also read interesting papers. Dr. L. B. Carson, Maquoketa, was elected president and Dr. Rosa Lowder, Maquoketa, secretary.

A banquet at seven o'clock ended the session.

CEDAR

County Medical Society met October 15, in Tipton. An interesting program was arranged for the occasion.

Dr. C. G. Stookey read a paper on "The County Hospital," Dr. C. W. Baker took for his subject "How to prevent Malpractice Suits." Dr. G. R. Woodhouse reported a "Case of Intermittent Hydro-Nephrosis." Dr. J. H. Rohrig discussed "Puerperal Fever," and V. W. Byrnes read a paper on "Obstetrics."

WASHINGTON

County Medical Society met October 26, at Washington, in annual session.

Dr. J. C. Boice was elected president, Dr. W. H. McLaughlin, vice-president, and Dr. C. A. Boice, secretary

Dr. H. C. Hull gave a report of the Hygiene Congress, held in Washington, D. C. recently, and Dr. J. F. Percy of Galesburg, Illinois, read a paper on "Certain Species of Cancer."

SOUTHWESTERN

Iowa Medical Association met in Creston, October 17, with a splendid program.

The out of town men to read papers were: Dr. C. B. Burk of Atlantic, "A New Diagnosis Sign of Typhoid Fever;" Dr. J. P. Lord of Omaha, "The Operative Treatment of Paralytic Deformities of the Foot;" Drs. W. L. Bierring of Des Moines, on "The Nature and Treatment of Rheumatism;" Dr. C. E. Ruth of Des Moines, "Successful Treatment of Fracture of the Neck of the Femur;" and Dr. J. A. Goodrich of Des Moines, on "Status Lymphaticus," the case reports of which were published in the October number of this Journal.

Dr. F. M. Bennett of Lenox, was elected president, and Dr. Enos Mitchell, secretary.

BOOK REVIEWS.

GYNECOLOGY.

By EMILIUS C. DUDLEY, A. M., M. D., Professor of Gynecology in the Northwestern Medical School; Gynecologist to St. Lukes and Wesley Hospitals, Chicago; and C. VON BACHELLE, M. S. M. D., Assistant Professor of Obstetrics, Chicago Policlinic and College of Physicians and Surgeons; Gynecologist to the German Hospital, Chicago. Series 1912 of the Practical Medicine Series. Price $1.25 net, The Year Book Publishers, Chicago.

We have enjoyed reading the review of this branch of surgery. There has been nothing in the year that would refresh the mind in gynecological findings better than this book.

THE CHEMIC PROBLEM IN NUTRITION (Magnesium Infiltration.)

A sketch of the causative factors in disorders of nutrition as related to diseases of the nervous system, by JOHN AULDE, M. D., formerly Assistant Physician, out patient department, Jefferson Medical College Hospital. Demontrator of Physical Diagnosis and Clinical Medicine, Medico-Chirurgical College; author of "The Pocket Pharmacy" "Diet for Health," etc., etc. Illustrated with four plates, John Aulde, M. D., Philadelphia, publisher.

"Magnesium Infiltration" is the subject of the discussion and the argument is along the line of this condition being the basic cause of most diseases, especially those resulting from faulty metabolism or those known as nervous diseases. A most interesting talk on germ life, leucocytes, antitoxins, opsonins, etc., is given in the preface. Metabolic conditions and changes are freely discussed in their relation to disease. We quote: "The reader should not infer, however, that this chemic deviation designated "magnesium infiltration" is a disease de novo; rather, it is in effect, and will be variously manifested at different stages in its progress, the cause being readily traceable to digestive disturbances arising from dietetic errors."

INTERNATIONAL CLINICS.

A Quarterly of Clinical Lectures and Original Articles on Treatment, Medicine, Surgery, Neurology, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, etc.; edited by HENRY W. CATTELL, A. M., M. D., Philadelphia, with the collaboration of John A. Witherspoon, M. D., Nashville, Wm. Osler, M. D., Oxford, A. McPhedran, M. D., Toronto, Frank Billings, M. D., Chicago, Chas. H. Mayo, M. D., Rochester, Thos. H. Rotch, M. D., Boston, John G. Clark, M. D., Philadelphia, James J. Walsh, M. D., New York, J. W. Ballantyne, M. D., Edinburgh, John Harold, M. D., London, Richard Kretz, M. D., Vienna. Volume III, twenty-second series, 1912. Price, $2.00. J. B. Lippincott Company, publishers.

CONTENTS OF VOLUME III.

Diagnosis and Treatment.

Prof. Ciesielski's Theory of Sex Determination.....S. W. Carruthers, M. D., Edin.
How it Happens that the Offspring of Plants, Animals, and Men is sometimes male, sometimes female.....Prof. Theophilus Ciesielski
The Tonus of the Vagus.....Albert Abrams, A. M., M. D.
The Modern Treatment of Gout.....Marcel Labbe
The Treatment of Chronic Endocarditis...Linsly R. Williams, A. M., M. D.
Massive Intramuscular Injections of Double Hydrochloride of Quinine and Urea in the Treatment of Pneumonia..Solomon Solis-Cohen, M. D.
Deceptive Onset in Lobar Pneumonia.....Thomas F. Reilly, M. S., M. D.
The Diagnosis and Treatment of Locomotor Ataxia.....Wm. J. Maloney, M. D., Ch. B., F. R. S., Edin.

Medicine.

Spontaneous Gangrene, with the Record of a Case illustrating the Ordinary Senile Type, Resulting in Spontaneous Amputation, and Spontaneous Gangrene Affecting the Several Extremities Successively in the Course of Acute Primary Infectious Endocarditis.....Albert E. Roussel, M. D.

The Difficulties Encountered in Differentiating Between Ulcer of the Duodenum, and Diseases of the Caecum, Appendix, and Lower Ilium.....Jerome M. Lynch, M. D.
Tuberculosis of the Genito-Urinary Organs.....Arthur Dean Bevan, M. D.
Cancer of the Hollow Viscera of the Abdomen, with Special Reference to Diagnosis.....Miles F. Porter, M. D.
Epileptic Masks and the Differential Diagnosis of Epilepsy.....
.....Wm. T. Shanahan, M. D.

Surgery.

The "Acute Abdomen" in Children: with Special Reference to Rarer forms of Generalized Peritonitis, and Acute Tuberculous Complications.....E. Scott Carmichael, M. B., F. R. C. S., Edin.
Adult Flat-Foot.....Walter G. Stern, M. D.
Death Following Two Cases of Operative Fixation of Fracture of the Shaft of the Femur.....John B. Roberts, M. D.
The Lorenz Operation for Congenital Dislocation of the Hip.....
.....James K. Young, M. D.
Breast Malignancy: A Plea for Early Operation and Extensive Dissection.....Geo. S. Foster, M. D.
Lymphatic Oedema: Elephantiasis: Observations and Remarks, with report of Operations.....Albert Van Der Veer, M. D.
The Value of Exercises in Treating Certain Cases of Acquired Inguinal Hernia.....R. Tait McKenzie, B. A., M. D.
A Year's Work in Appendicitis.....John B. Deaver, M. D., LL. D.

Ophthalmology.

Notes on Some Interesting Eye Cases.....Leslie Buchanan, M. D.

Obstetrics and Gynecology.

X-Ray in Obstetrics: Radiographic Diagnosis of Pregnancies.....
.....Patrick S. O'Donnell, A. B., M. D.
The Recognition and Treatment of the Complications of Gonorrhoea in Women.....Walter T. Dannreuther, M. D.

Occupational Diseases.

Occupational Hygiene in the Navy.....Surgeon-General Chas. F. Stokes
Industrial Poisoning.....Maria M. Vinton, A. M., M. D.

These articles are good, those are best which for the moment supply the information the reader is desirous of. Recent methods of treatment, both surgical and medical can well be studied in the different articles, and much valuable information gained. This volume is fully up to the standard heretofore maintained.

MEDICAL NEWS NOTES.

Dr. W. B. Miller of Centerville, is the recent owner of a new Ford.

Dr. L. E. Evens of Waterloo, has returned from a prolonged visit in Canada.

Dr. and Mrs. J. L. Sawyers of Centerville, are enjoying a visit in the Eastern States.

Dr. Emma J. Neal of Cedar Rapids, is recovering from an operation for appendicitis.

Dr. F. W. Danbury of Decorah, has recently been ill at his home, suffering from diabetes.

Dr. E. B. Henderson of Marengo, has recovered from his recent attack of typhoid fever.

Dr. C. D. Fellows of Algona, returned early in October from a trip to Washington, D. C.

Dr. I. C. Wood of Logan, read a paper before the Association of Railway Surgeons in Chicago.

Dr. E. J. Smith of Harlan, enjoyed a visit with his son and daughter in Ogden, Utah, in October.

Dr. C. H. Mulroney of Ft. Dodge, attended the Railway Surgeons Convention in Chicago, in October.

Dr. M. F. Boyd of Oskaloosa, has been appointed Dairy and Food Inspector for the Oskaloosa District.

Dr. E. E. White and family of Huxley, enjoyed a two weeks vacation in October, touring in Kansas.

Dr. and Mrs. H. C. Potter of Des Moines, have returned from an extended visit at Tallewood, Virginia.

Dr. J. N. Warren of Sioux City, recently underwent an operation at the Samaritan Hospital in Sioux City.

Dr. and Mrs. L. C. Wilson of What Cheer, have returned from their annual hunting trip, in Minnesota.

Dr. and Mrs. W. H. Roberts of Ottumwa have returned from an extended visit in New York and Detroit.

Drs. Van Buren Knott and W. J. Bussey of Sioux City, enjoyed a hunting trip in Oregon, during October.

Dr. and Mrs. W. O. McDowell of Grundy Center, have returned from their wedding trip through the West.

Dr. J. H. Neimack and family of Charles City, returned in October from an enjoyable vacation in the East.

Dr. M. L. Allen of Tama, attended the convention of Railway Surgeons, which met in Chicago in October.

Dr. C. A. Hurd of Northwood, recently returned from an extended visit in various points in South Dakota.

Dr. Lynn Putman of Shenandoah, was in Chicago in October, to attend the Association of Railway Physicians.

Dr. C. E. Birney of Estherville spent a few days during October, taking post graduate work in Rochester and Chicago.

Dr. R. R. Williams of Manning, returned in October from a trip in Canada, where he was looking after his land interests.

Dr. W. E. Sanders of Des Moines, spent October in Baltimore, taking post graduate work in the John Hopkins Hospital.

TWELFTH EDITION

POLK'S
Medical Register
And
Directory of North America

Ready December 1, 1912

PUBLISHED AT REGULAR INTERVALS SINCE 1886
Compiled from original and official sources

¶ Names and addresses with college information of more than 140,000 physicians without regard to school practiced.

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Detroit, Michigan

Dr. C. B. Powell of Albia, spent a few days in October, in Chicago, attending the meeting of the Wabash Railway Surgeons.

Dr. and Mrs. Chas. Ramage of Charles City, have been called to Edinburgh Scotland, by the serious illness of the doctor's mother.

Dr. L. L. Bond of Denison, attended the convention of the American Association of Railway Surgeons, which met in Chicago, recently.

Dr. J. C. Powers of Hampton, is recovering from an attack of blood poisoning, contracted from the prick of a needle during an operation.

Dr. E. M. Myers of Boone, who has been receiving treatments at the Mercy Hospital, Chicago, was expected home the tenth of this month.

The Des Moines doctors who attended the Railway Surgeons Convention in Chicago are, O. J. Fay, C. M. Werts, A. C. Page, and F. E. V. Shore.

Drs. W. S. Norton and E. H. King of Muscatine, attended the American Association of Railway Surgeons, which met in Chicago, in October.

Dr. F. O. Richards of Winterset, recently returned from six weeks work in Chicago, in the special study of eye, ear, nose and throat diseases.

The Iowa Methodist Hospital, Des Moines, state in their annual report that during the year ending September 1, 1912, they treated 3,101 patients.

Dr. Florence Sherbon of Colfax, officiated at the Baby Health Contest at the biennial of the Iowa Mothers' Congress, in Ottumwa, October 8, 9 and 10.

Dr. Woods Hutchinson, formerly of Des Moines, has been secured to make the address at the dedication of the new high school building, Des Moines, November 18.

Dr. P. J. Brannon of Denison, suffered a broken arm, in October. While attempting to crank his motor car, the engine back-fired, throwing the crank against his arm.

Dr. E. J. Thierman of Aredale, has sold his practice at that place, and after spending some time in Chicago, studying, will take several months post graduate work in Germany.

Dr. S. B. Zollar of Fredericksburg, recently took a four weeks post-graduate course in Chicago. Mrs. Zollar accompanied him, and while there underwent a surgical operation.

Dr. J. R. Walker of Ft. Madison, is taking several weeks of post graduate work, in New York City. Dr. V. T. Doering of Ft. Madison, is attending to his practice during his absence.